

SLUBODIN, B.V.; FOTIYEV, A.A.

Phase diagram of the $\text{Na}_2\text{O} - \text{V}_2\text{O}_5$ system. Zhur. prikl. khim.
38 no.4:801-806 Ap '65. (MIRA 18:6)

1. Institut khimii Ural'skogo filiala AN SSSR.

SLOBODIN, V.

In the Department of Economic Research of the Urals Branch
of the Academy of Sciences of the U.S.S.R. Vop.ekon.
no.8:159-160 Ag '60. (MIRA 13:7)

1. Zavednyushchiy otdelou ekonomicheskikh issledovaniy
Ural'skogo filiala Akademii nauk SSSR.
(Ural Mountain region--Collective farms--Income distribution)
(Ural Mountain region--Power resources)

SLOBODIN, V.G., inzh.

Semiautomatic machine for the circumferential hardening of the teeth
of the driven pinion of the TE3 diesel locomotive. Mashinostroenie
no.3:55-58 My-Je '62. (MIRA 15:7)

1. Luganskiy zavod imeni Oktyabr'skoy revolyutsii.
(Steel--Hardening) (Diesel locomotives)

TERENT'YEV, M.L.; OSAD'KO, M.P.; BRAGINSKIY, B.I.; SLOBODIN, V.N.; FISHMAN,
Z.A.; LEVIN, I.Ye.; TSYNKOVA, M.Yu.; RADIR'YAN, G.G.; TYUTIN, V.A.;
ABRAMOV, V.A.; FRAYER, S.V.; KOBCHIKOVA, I.A.; KARNAUKHOVA, Ye.I.;
OBOLMENSKIY, K.P.; IL'IN, S.A.; GAVRILOV, V.I.; FHEYDMAN, S.M.;
KALASHNIKOVA, V.S., redaktor; LAPIDUS, M.A., redaktor; RAKITINA,
Ye.D., redaktor; FEDOTOVA, A.F., tekhnicheskiy redaktor

[Manual for students of collective farm economy] V pomoshch'
izuchaiushchim ekonomiku kolkhozov. Moskva, Gos. izd-vo selkhoz.
lit-ry, 1956. 423 p.
(Collective farms)

(MLRA 10:1)

AVERKIYEV, A.S., red.; AGEYEV, Ya.P., dots., otv. red.; AREF'YEV, V.A., dots., kand. ekon. nauk, red.; DEMIDOV, S.F., akademik, red.; KARSHIN, V.Ye., dots., red.; KOGAN, A.Ya., starshiy prepodav., red.; MAKHALOV, V.I., starshiy prepodavatel', red.; PITAYEVSKIY, P.I., prof., red.; SLOBODIN, V.M. prof., red.; SHOLOKHOV, Ye.I., red.

[Problems in the new system of agricultural planning] Voprosy novogo poriadka planirovaniia sel'skogo khoziaistva; trudy. Kyibyshev, Kuibyshevskii planovoi in-t, 1961. 419 p. (MIRA 15:12)

1. Mezhvuzovskaya nauchnaya konferentsiya, Kuibyshev, 1960.
2. Zamestitel' predsedatelya Kuybyshevskoy oblastnoy komissii (for Averkiyev).
3. Kuybyshevskiy planovyy institut (for Ageyev, Makhalov, Karshin).
4. Deystvitel'nyy chlen Vsesoyuznoy akademii sel'skokhozyaystvennykh nauk imeni V.I.Lenina i Moskovskaya oreda Lenina sel'skokhozyaystvennaya akademiya imeni K.A.Timiryazev (for Demidov).
5. Ural'skiy filial Akademii nauk SSSR (for Slobodin).
6. Zamestitel' nachal'nika ot dela sel'skogo khozyaystva i zagotovok Gosudarstvennogo planovogo komiteta Sveti Ministerov RSFSR (for Sholokhov).

(Agricultural policy)

SLOBODIN, V.N.; IVANYUK, Yu.I.; KUZOVLEV, P.M.; NAGAYEV, Yu.A., LUPAREVA, T.F.; MESHCHANINOV, S.I.; BRYUKHOV, Yu.A.; SYCHEV, F.A.; KOSYAKOV, P.O., red.; ZANOV, N.N., red. izd-va; TAMKOVA, N.F., tekhn.red.

[Distribution and specialization of agriculture in Chelyabinsk Province] Razmeshchenie i spetsializatsiya sel'skogo khoziaistva Cheliabinskoi oblasti. Sverdlovsk, AN SSSR, 1963. 204 p.
(MIRA 16:12)

1. Akademiya nauk SSSR. Ural'skiy filial, Sverdlovsk. Otdel ekonomicheskikh issledovaniy.

(Chelyabinsk Province--Agriculture--Economic aspects)

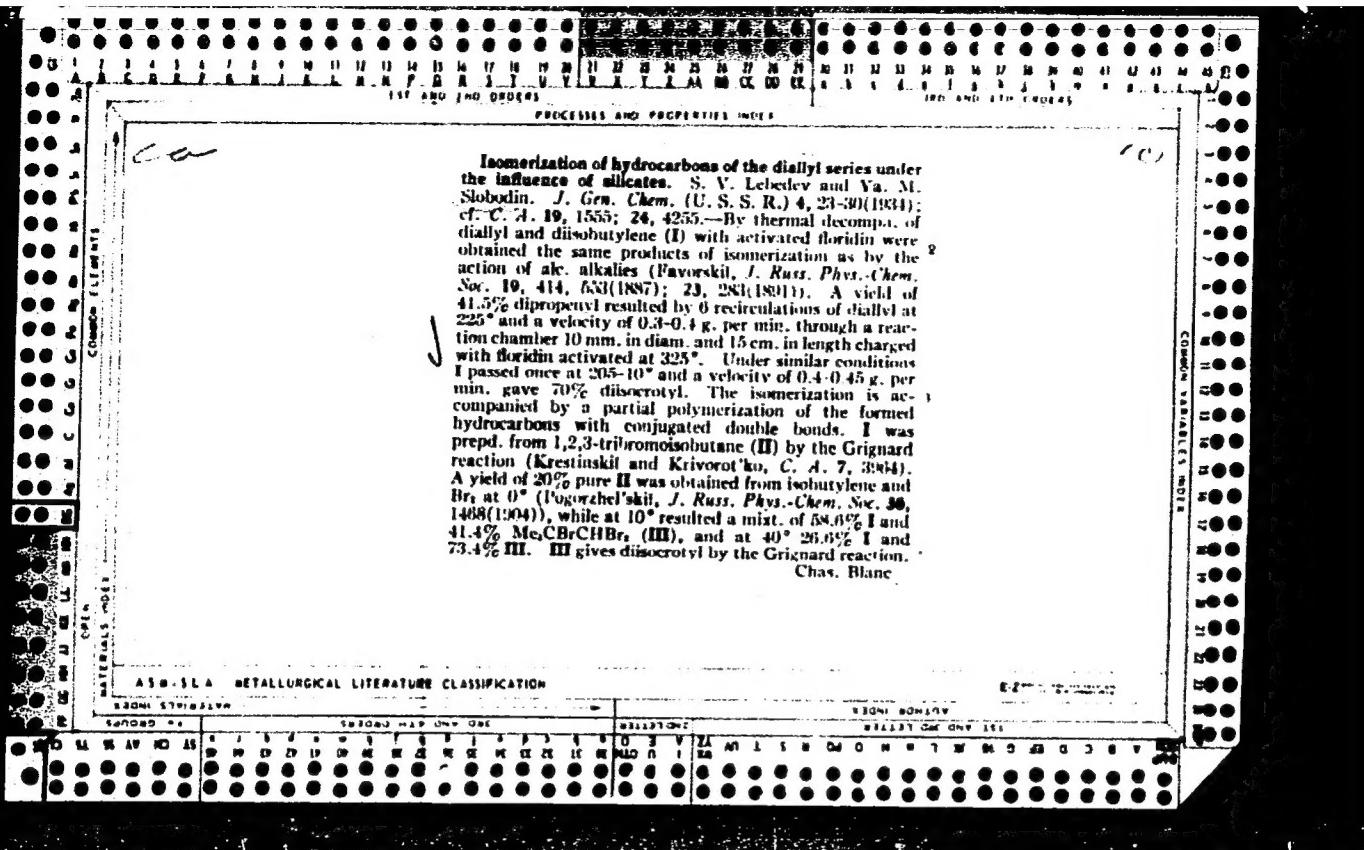
ZAGORSKAYA, N.G.; YASHINA, Z.I.; SLOBODIN, V.Ya.; LEVINA, F.M.;
BELEVICH, A.M.; URVANTSEV, N.N., doktor geol.-mineral. nauk, red.

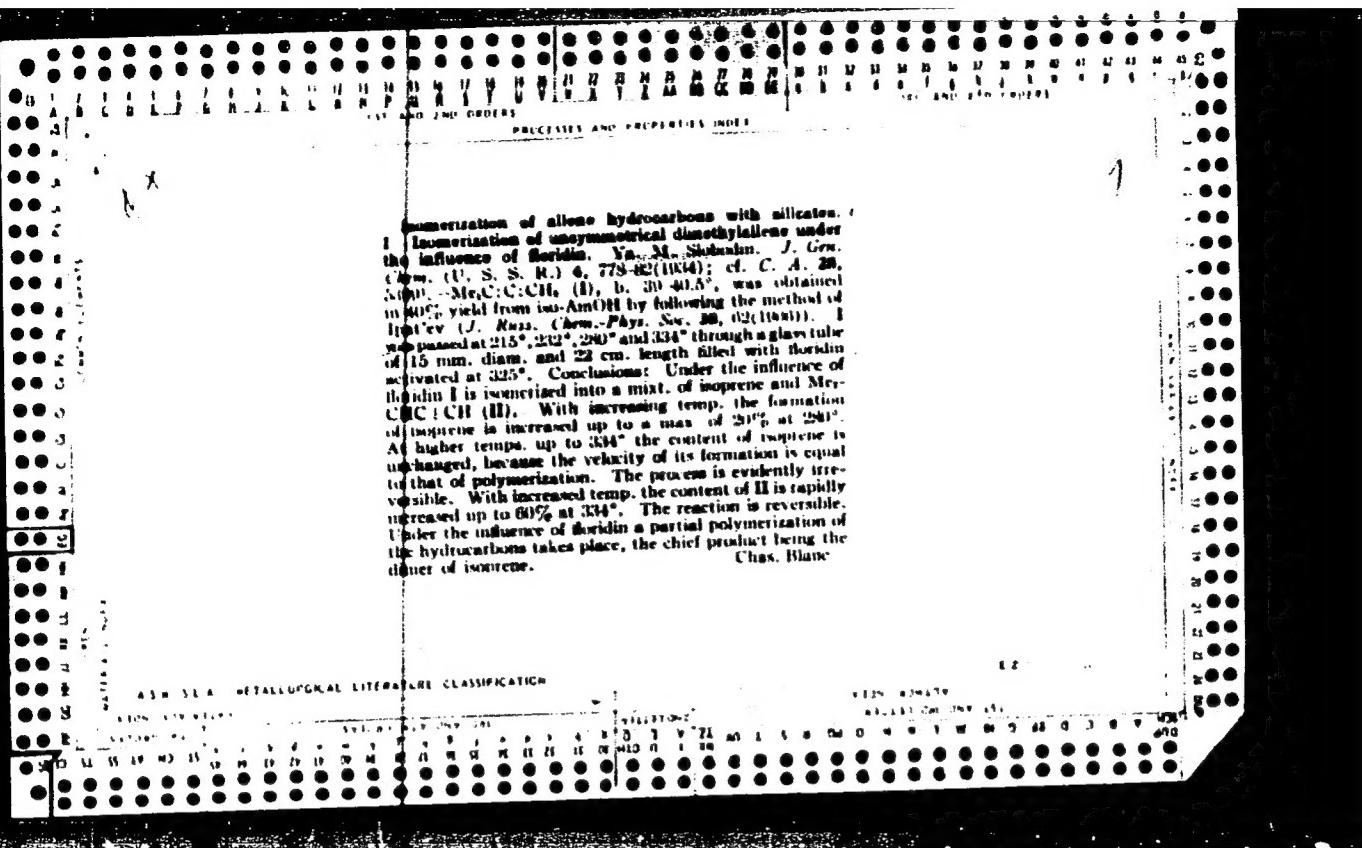
[Marine Neogene(?)—Quaternary sediments in the lower Yenisey
Valley.] Morskie neogen (?)—chetvertichnye otlozheniya
nizhnego techeniya reki Eniseia. Moskva, Nedra, 1965. 90 p.
(Leningrad. Nauchno-issledovatel'skii institut geologii
arktiki. Trudy, no. 144) (MIRA 18:8)

SLOBODIN, Ya.M.; MAYOROVA, V.Ye.; SMIRNOVA, A.M.

Thermal degradation of ethylene-propylene rubber. Part 1:
 $C_2 - C_6$ hydrocarbons in the products of thermal degradation
of ethylene-propylene synthetic rubber. Vysokom. soed. 6
no.3:541-544 Mr'64. (MIRA 17:5)

1. Severo-zapadnyy zaochnyy politekhnicheskiy institut.





1 Isomerization of alkene hydrocarbons with silicate.
1 Isomerization of unsymmetrical dimethyldiene under
the influence of floridin. Ya. M. Skobulin. *J. Gen.*
Chem. (U. S. S. R.) 4, 778-82 (1934); cf. *C. A.* 28,
5400. -Me₂C=C:CH₂ (I), b.p. 30-40.8°, was obtained
in 60% yield from iso-AmOH by following the method of
Ipat'ev (*J. Russ. Chem.-Phys. Soc.* 38, 62 (1900)). I
was passed at 215°, 232°, 240° and 334° through a glass tube
of 15 mm. diam. and 22 cm. length filled with floridin
activated at 325°. Conclusions: Under the influence of
floridin I is isomerized into a mixt. of isoprene and Me₂C=C:CH₂ (II). With increasing temp. the formation
of isoprene is increased up to a max. of 20% at 290°.
At higher temps. up to 334° the content of isoprene is
unchanged, because the velocity of its formation is equal
to that of polymerization. The process is evidently irre-
versible. With increased temp. the content of II is rapidly
increased up to 80% at 334°. The reaction is reversible.
Under the influence of floridin a partial polymerization of
the hydrocarbons takes place, the chief product being the
dimer of isoprene.
Chas. Blane

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PROCESSES AND PROPERTIES INDEX

Isomerization of alkenes hydrocarbons with alkynes.
 II. Isomerization of methylalkanes under the influence of
 Borlin. Ya. M. Shustina. *J. Gen. Chem. (U. S. S. R.)*
 2, 48 82 (1932); *cf. C. A.* 29, 21459.—An improved
 method for the prepn. of $\text{MeCH}_2\text{C}\equiv\text{CH}_2$ (I) was developed.
 Crotonyl ale. with 2 mols. of Br_2 at -20° gave
 $\text{MeCHBr}_2\text{CH}_2\text{OH}$; this with red P and Br_2 produced
 $\text{MeCH}_2\text{C}\equiv\text{CH}_2$, b. 94.0°, d₄ 2.1007; 1
 the latter distil. with pumld. KOH at 120° in an oil bath at
 15 mm. pressure gave 85% $\text{MeCH}_2\text{C}\equiv\text{CH}_2$, b.p. 90.5°,
 which, treated in ale. with Zn dust (Gustavson, *J. Russ. Phys.-Chem. Soc.* 23, 97 (1891)), gave 80% I, b. 17.18°.
 I was passed at 200°, 245° and 330° over activated Borlin
 as was described before. I is more stable than $\text{Me}_2\text{C}\equiv\text{CH}_2$.
 The isomerization begins only at 200° with 75.4%
 of unchanged product at 250°. The chief product of
 isomerization is bivinyl. At 330° the light hydrocarbons
 contain 20.6% bivinyl. The formation of $\text{KC}\equiv\text{CH}_2$ be-
 gins at 205°, increasing to 3.4% at 245° and 3.9% at 330°.
 No formation of $\text{MeC}\equiv\text{CMe}$ could be detected. The
 products of isomerization showed no traces of dimers of
 bivinyl and I.
 Chas. Blanc

ASW-5A. METALLURGICAL LITERATURE CLASSIFICATION

CA

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PROPERTIES AND PREPARATION INDEX

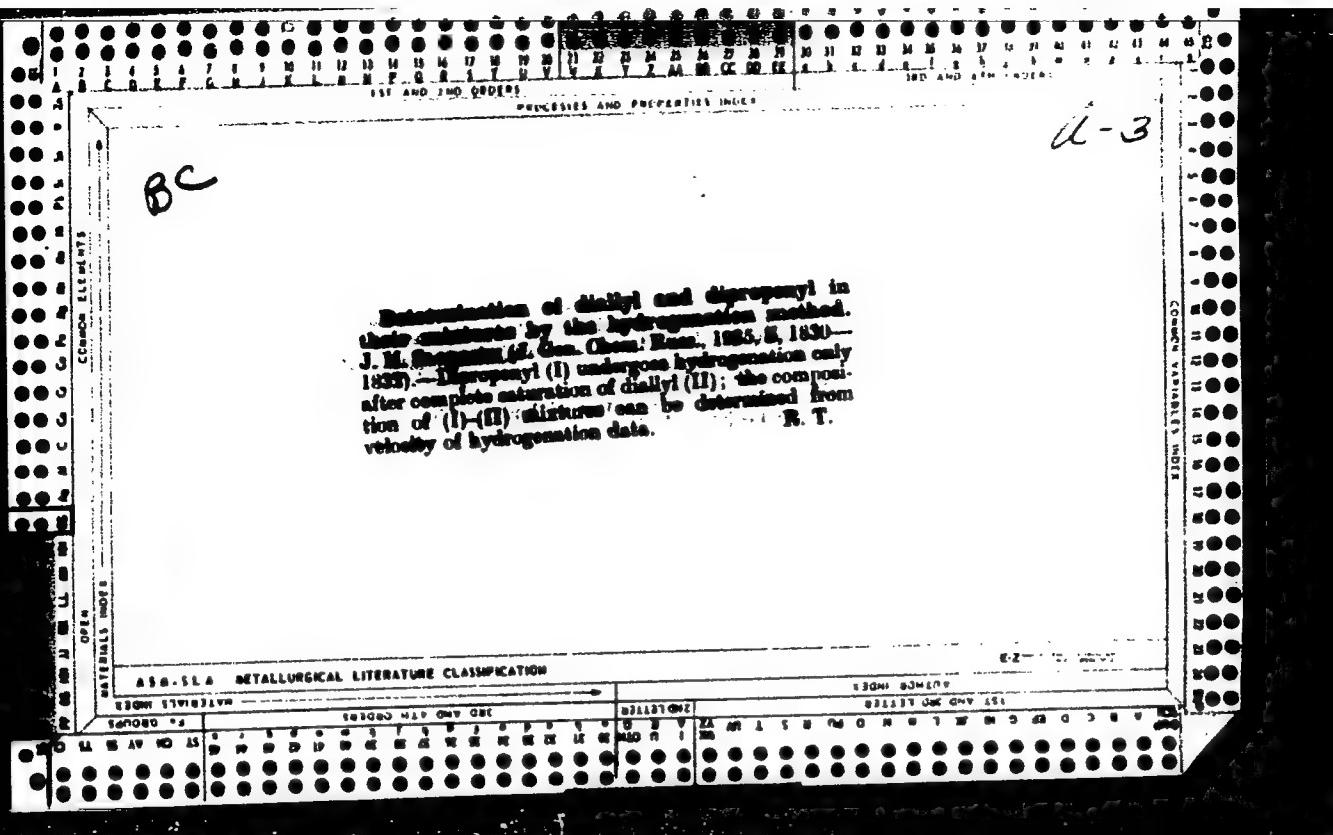
Dimerization of Divinyl. Va. M. Slobodin. *J. Gen. Chem. (U. S. S. R.)* 3, 1115-20 (1933).—A condensate obtained in the synthesis of divinyl (I) by the Lebedev method (*J. Russ. Phys.-Chem. Soc.* 42, 720 (1910); *C. A.* 9, 710) by catalytic decompos. of alk. at 425°, was fractionated and the fractions, b. 108-10°, 130-2° and 134-40°, were investigated. The preliminary results show that the polymerization of I at 400-25° in the presence of a dehydrogenating catalyst gives a dimer of I, $\text{CH}_2\text{CH}=\text{CH}-\text{CH}=\text{CH}_2$, $\text{CH}=\text{CH}_2\text{CH}_2\text{CH}=\text{CH}_2$, and the end product, p -xylene along with some PhMe and PhCH_2CH_2 . Chas. Blanc

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

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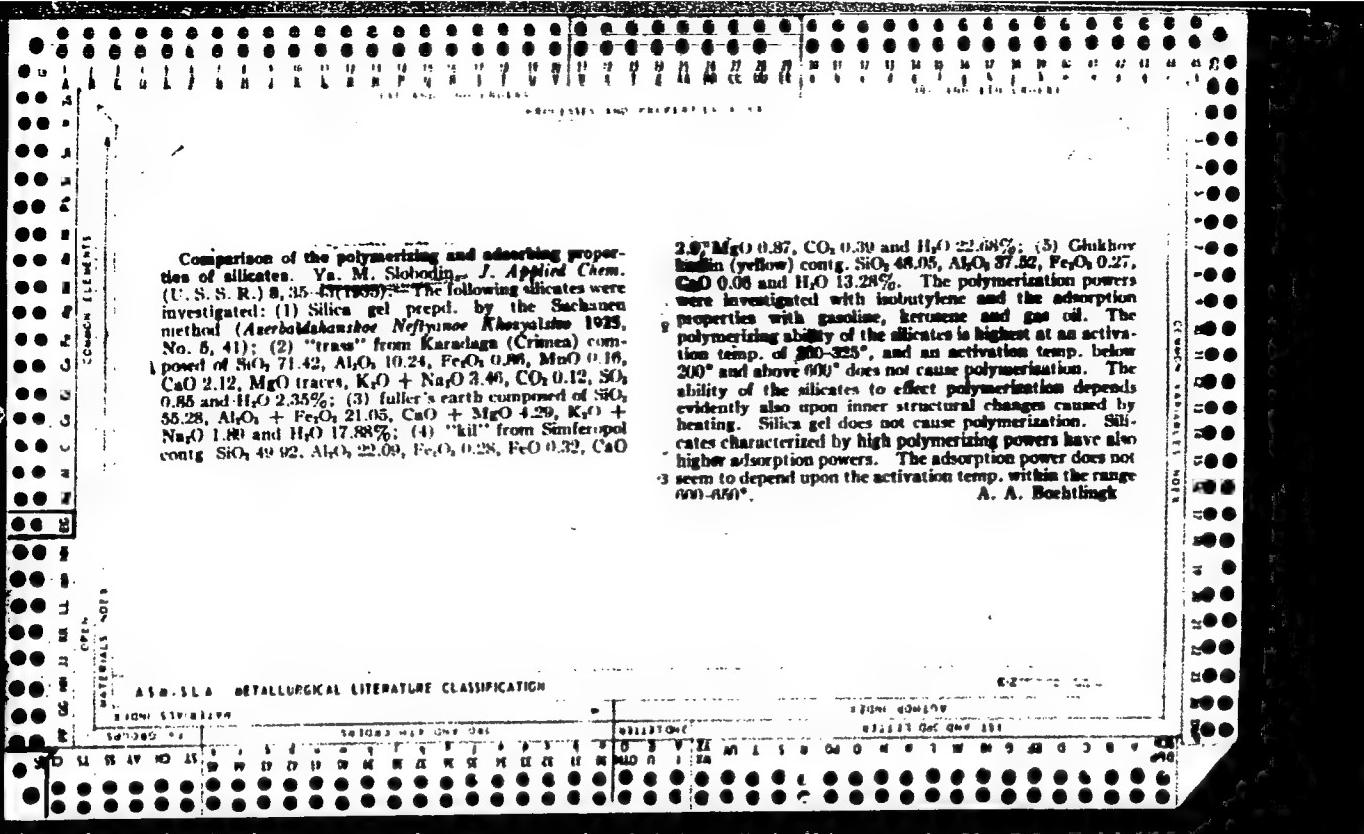
city

Determination of bialyl and bipropenyl in mixtures by the method of hydrogenation. V. M. Nefedov. *J. Gen. Chem.*, U.S.S.R., 3, 1830 (1933). Satisfactory results, obtained in the determination of bialyl and bipropenyl in a mixt., by the hydrogenation method of Lebedev (*J. Russ. Phys.-Chem. Soc.*, 39, 1891 (1907); 40, 761 (1908)), are shown by graphs and tables. Chas. Blane

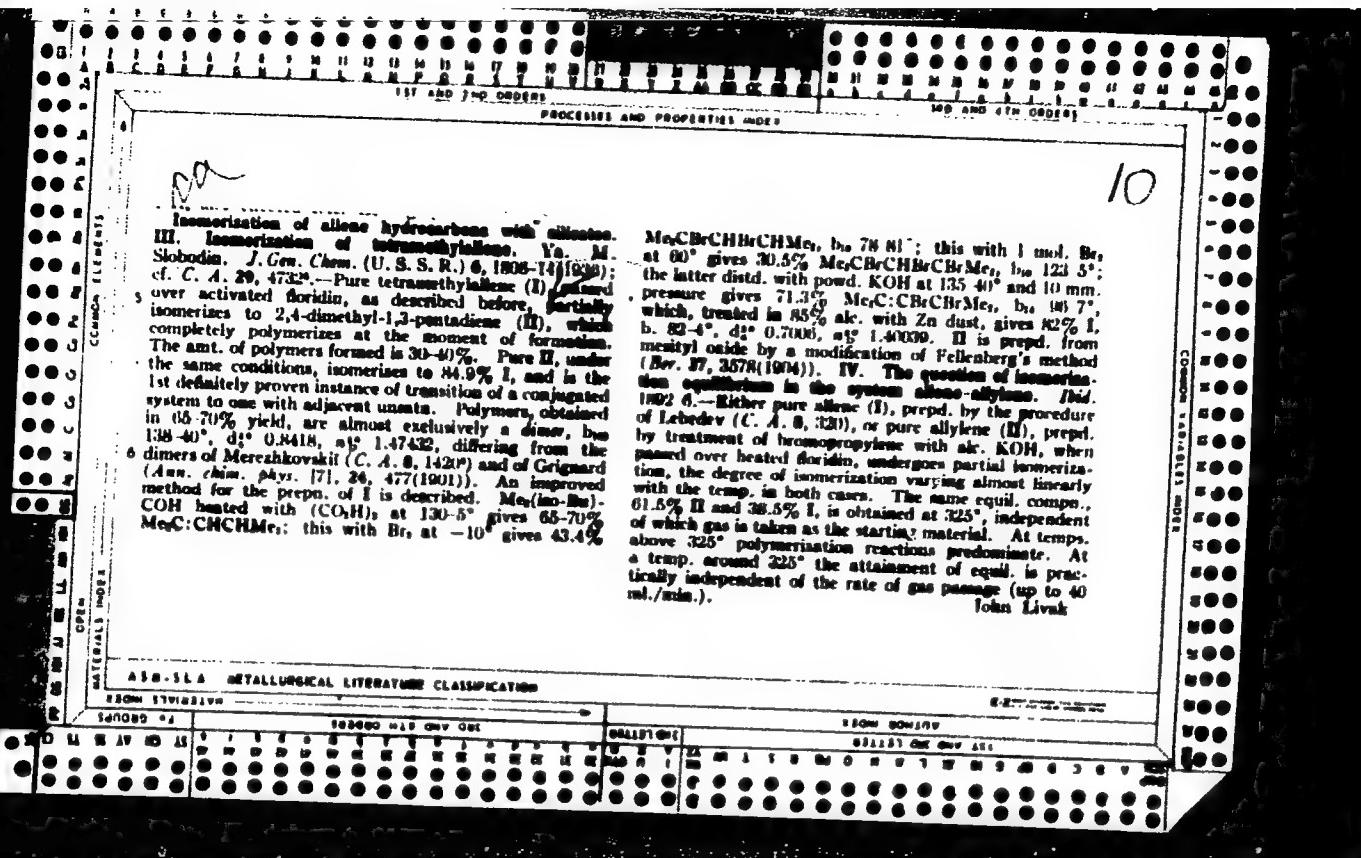
APPENDIX B: CLASSICAL LITERATURE CLASSIFICATION

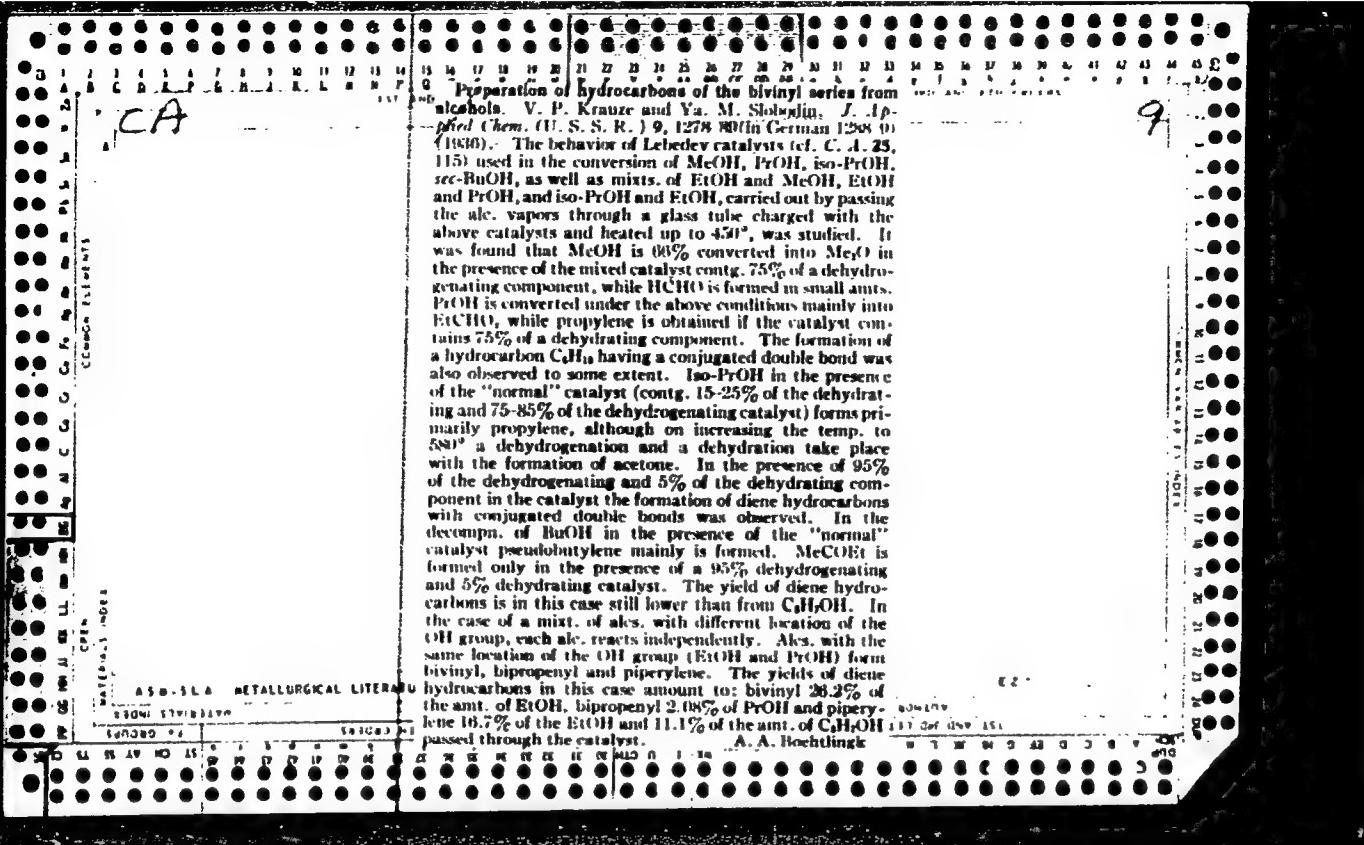
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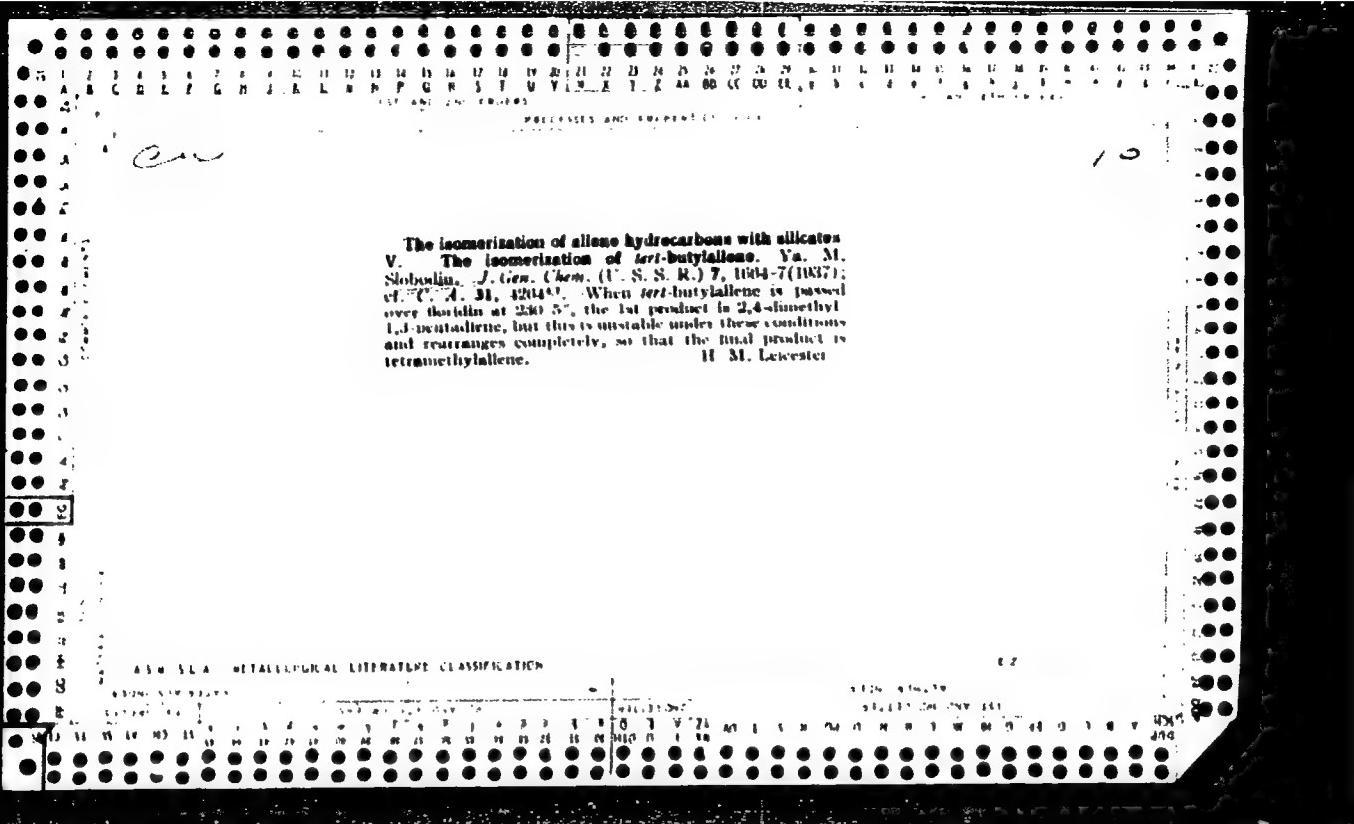
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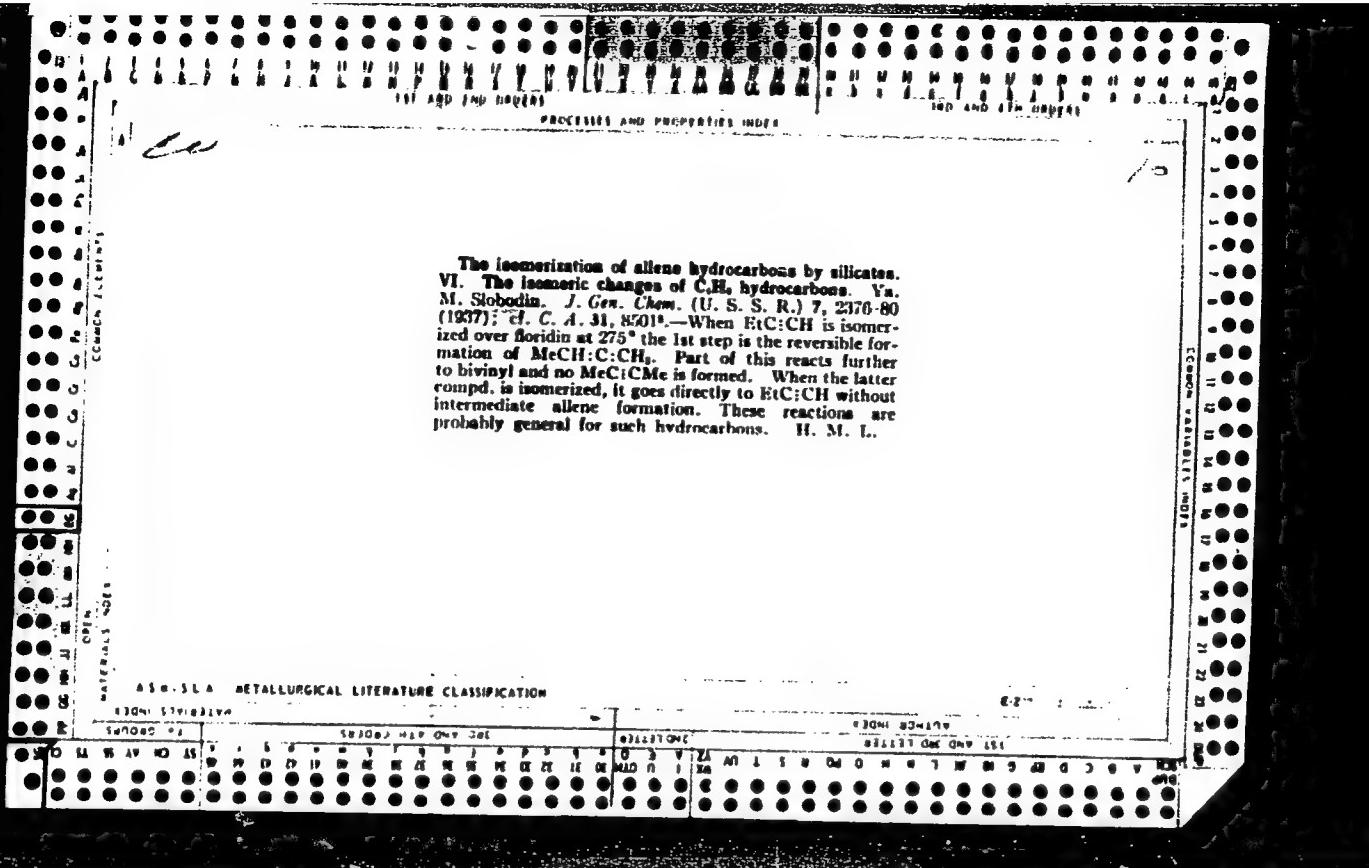


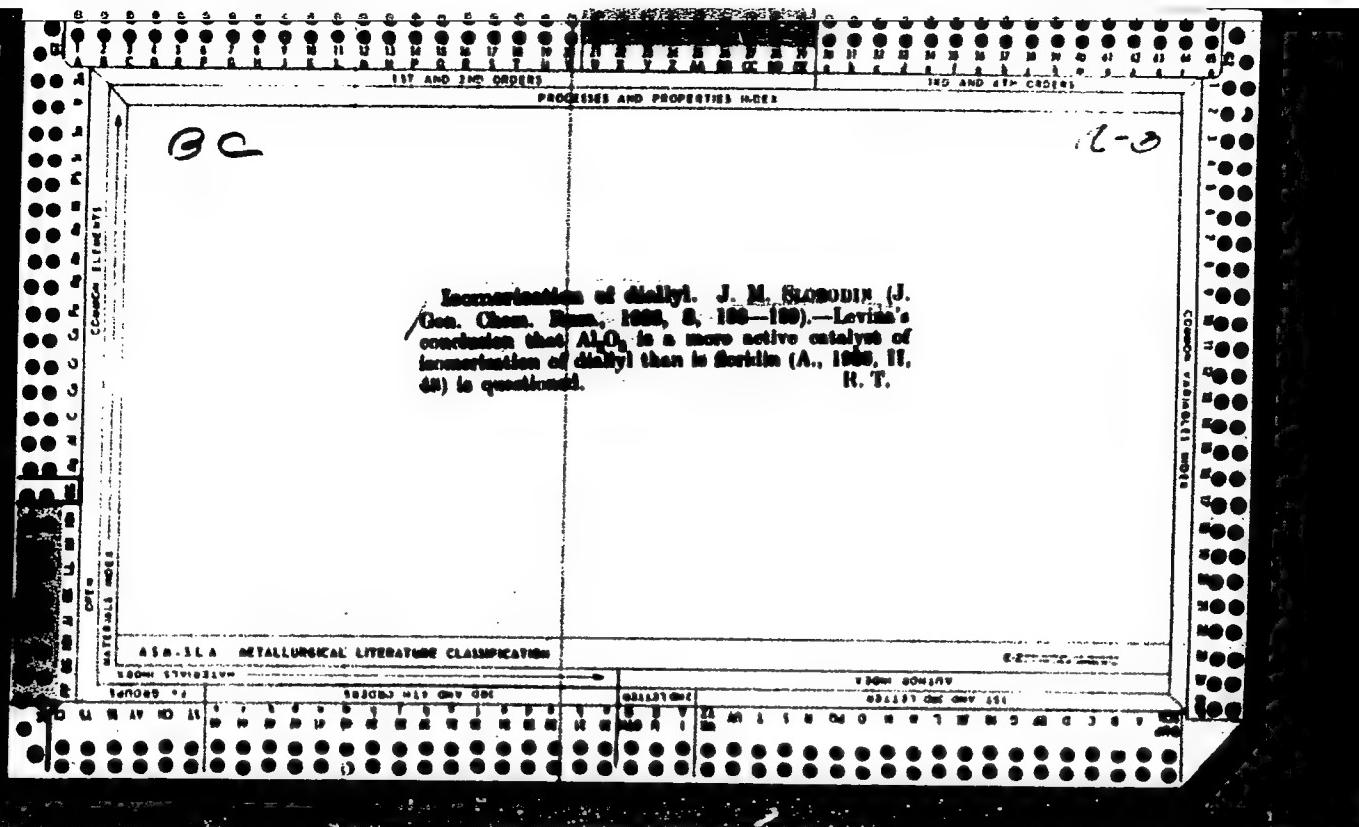
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PROCESSES AND PROPERTIES INDEX																																																																																			
<p style="text-align: center;"><i>ca</i></p> <p>Isomerization of cyclic hydrocarbons with an isolated system of double bonds. Ya. M. Slepchenko. <i>J. Gen. Chem. (U.S.S.R.)</i> 6, 129-30(1936). After passing 1-ethenyl-3-cyclohexene (I) over floridin at 210-40°, the α had increased and the reaction products with $C(NO_2)_2$ had changed from yellow to blond-red. The products from I were examined, on the hypothesis that the 2 double bonds of I would tend to approach each other to form a conjugated system, and the formation of 1-ethylidene-2-cyclohexene (II) was established. It was shown that 1-ethenyl-2-cyclohexene, 1-ethenyl-1-cyclohexene, 1-ethylidene-3-cyclohexene and 1-ethyl-1,3-cyclohexadiene were absent, but it seems likely that some product intermediate between I and II should be formed, since a similar isomerization of limonene (III) gave isoborneol (1-methyl-4-isopropenyl-2-cyclohexene) (IV). The products of isomerization of III gave a red color with $C(NO_2)_2$ (III gave yellow), were optically inactive, and had a decreased b. p., n and d. Fractional distn. of 10 g. gave (A) 4.5 g., b. 108-72°, (B) 0.5 g., b. 180-4°, (C) 5.0 g., b. 195-8°. A and B did not react with maleic anhydride nor did they show an exotherm. A resembles the IV of Chugaev (<i>J. Russ. Phys.-Chem. Soc.</i> 19, 414, 553; 23, 283). It has d. 0.8961, nD₂₀ 1.40043, and gave no crystalline chloride or tetrabromide. The structure of A was confirmed by oxidation to α-acetyl-α'-methylidipic acid (VIII). B had d²⁰ 0.850 and was probably terpinolene. The absence in the isomerization products of III of the expected isopropenolone (1-methyl-4-isopropenylidene-2-cyclohexene) (V) and the high percentage (50%) of polymerized product is to be explained by the strong tendency of V, which was probably the end product of the isomerization process, to polymerize. I isomerized with difficulty when passed through the 10 mm. diam. hard glass tube at 0.5 g./min. over 15 cm. of floridin, so that it was necessary to pass it several times, each time removing by distn. the product which b. above 180°. Two fractions, one b. 130-4° (nD₂₀ 1.46641) and another b. 134-7° (nD₂₀ 1.47167) were combined and oxidized with KMnO₄ in AcMe to give 1-α-hydroxyethylcyclohexene-1,2,3-triol (VI), m. 48° (from Et₂O), in approx. 50% yield. VI boiled with K₂Cr₂O₇ and H₂SO₄ for 6 hrs. gave α-ketodipic acid and a neutral substance, m. 52-4°, difficultly sol. in H₂O, cold alk. and Et₂O. The fraction b. 130-7° reacted vigorously on the water bath with maleic anhydride. No pure products were isolated, but the acid obtained after treatment with Na₂CO₃ and H₂SO₄ gave a Ag salt with the calcd. Ag content. The fraction A from III with KMnO₄ in AcMe gave a tetrol (VII), m. 51-3°. VII with CrO₃ moist. gave VIII. III isomerized much more readily than I, only 1 passage over floridin being necessary. Lewis W. Betz</p>																																																																																			
<p style="text-align: right;">10</p> <p style="text-align: center;">COPPER ISOTOPES</p>																																																																																			
<p style="text-align: center;">ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION</p>																																																																																			
<table border="1"> <tr> <td colspan="2">130M 517-83178</td> <td colspan="2">130M 517-83179</td> <td colspan="2">130M 517-83180</td> <td colspan="2">130M 517-83181</td> </tr> <tr> <td colspan="2">140NO 4</td> <td colspan="2">140NO 5</td> <td colspan="2">140NO 6</td> <td colspan="2">140NO 7</td> </tr> <tr> <td>Y</td><td>D</td><td>M</td><td>S</td><td>A</td><td>R</td><td>T</td><td>V</td> <td>Y</td><td>D</td><td>M</td><td>S</td><td>A</td><td>R</td><td>T</td><td>V</td> <td>Y</td><td>D</td><td>M</td><td>S</td><td>A</td><td>R</td><td>T</td><td>V</td> </tr> <tr> <td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td> </tr> </table>																				130M 517-83178		130M 517-83179		130M 517-83180		130M 517-83181		140NO 4		140NO 5		140NO 6		140NO 7		Y	D	M	S	A	R	T	V	Y	D	M	S	A	R	T	V	Y	D	M	S	A	R	T	V	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
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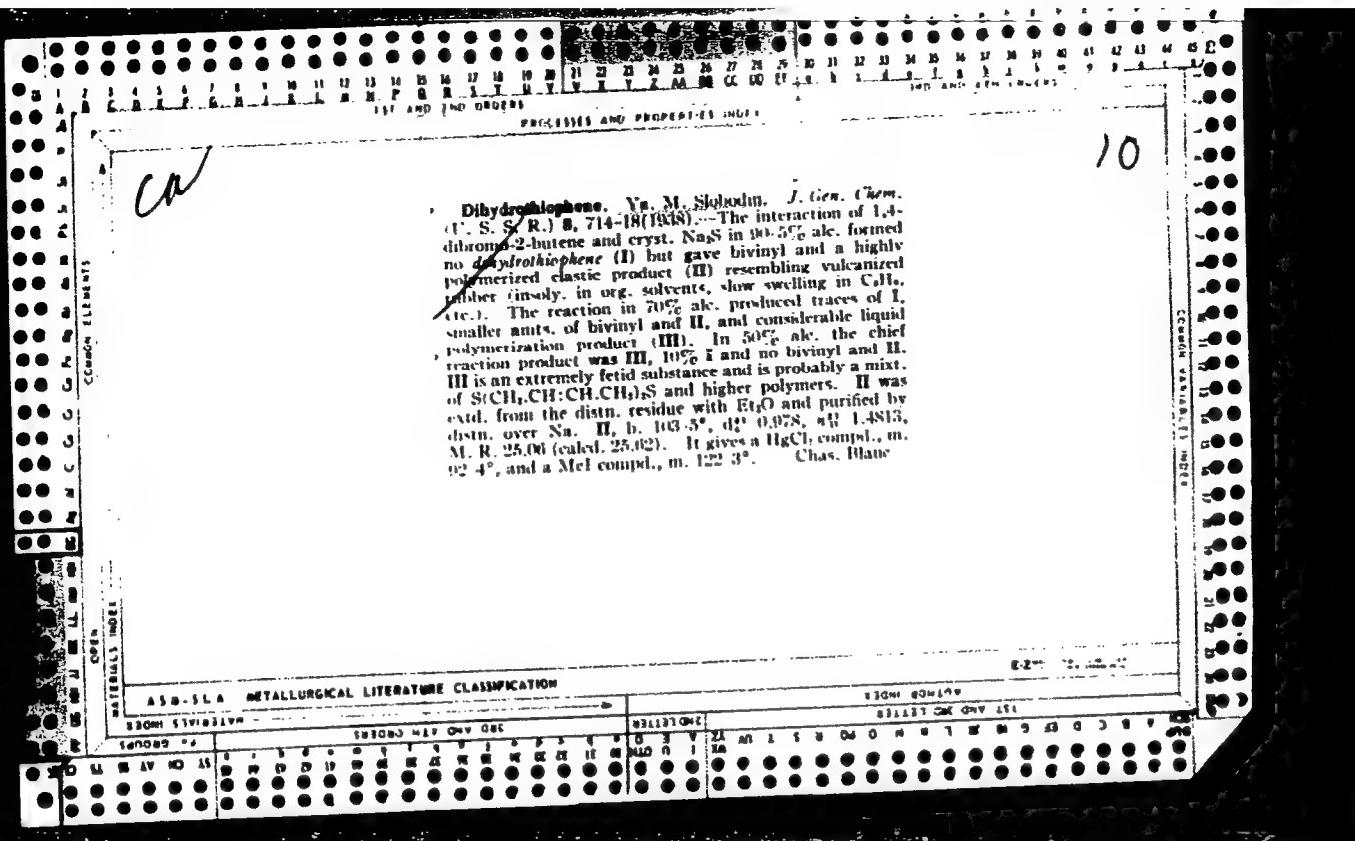


The dehydration of alkylallyl carbinols. V. M. Noland, *J. Am. Chem. (U. S. S. R.)*, **21**, 2416 (1938). When $\text{Me}_2\text{C}(\text{OH})\text{CH}_2\text{CH}_2\text{CH}_3$ is dehydrated by heating with H_2SO_4 or $(\text{CO}_2\text{H})_2$ or by addn. and removal of HCl , it forms C_5H_8 , which has been considered to be 2-methyl-1,4-pentadiene. Ozonization shows that only a small amt. of this compd. is present, and most of the reaction product is 1,1-dimethyl-1,3-butadiene (maleic anhydride addn. compd., m. 132-4°). In a similar way, $\text{Bu}(\text{OH})\text{CH}_2\text{CH}_2\text{CH}_3$ gives chiefly 1,1-diethyl-1,3-butadiene (maleic anhydride addn. compd., m. 72-4°), and a little 4-ethyl-1,4-hexadiene; and $\text{Pr}(\text{CO}-\text{CH}_2)\text{CH}_2\text{CH}_3$ gives mainly 1,1-dipropyl-1,3-butadiene (maleic anhydride addn. compd. is of high mol. wt.), and some 4-propyl-1,4-heptadiene. However, $\text{no-Pr}(\text{C}(\text{OH})\text{CH}_2\text{CH}_2\text{CH}_3)$ gives a mixt. contg. 10% 5-methyl-4-isopropyl-1,4-hexadiene and 20% 1,1-diisopropyl-1,3-butadiene (maleic anhydride addn. compd., m. 212° (decompn.)). Thus, dehydration goes according to the Wagner-Zaltsev rule, and the existing double bond in the mol. directs the reaction toward the formation of a conjugated system.

¹ (decompn.). Thus, dehydration goes according to the Wagner-Zaltsev rule, and the existing double bond in the mol. directs the reaction toward the formation of a conjugated system. H. M. Leicester

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CH

Dehydrogenation of 1-vinyl-3-cyclohexene. Ya. M. Skobodin and P. N. Krasnoboeva. *J. Gen. Chem. (U. S. S. R.)* 8, 738-9 (1938).—Passing 1-vinyl-3-cyclohexene at the rate of 0.2 g./min. over Ni deposited on Al_2O_3 at 300-20° produced up to 84% PhEt and traces of styrene. The gaseous reaction products contained no CH_4 and other hydrocarbons. I, b, 129-30°, n_D²⁰ 1.4639, was prep'd. by polymerization of 1,3-butadiene (Lebedev and Skavromskaya, *C. A.* 6, 855). The presence of styrene in the catalyst suggests that PhEt is formed by hydrogenation of the intermediate styrene and not by preliminary isomerization of I to ethylcyclohexadiene and dehydrogenation of the latter to PhEt. Chas. Blanc

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ASH-SLA METALLURGICAL LITERATURE CLASSIFICATION

JOURNAL OF METALLURGY

8-27-2000

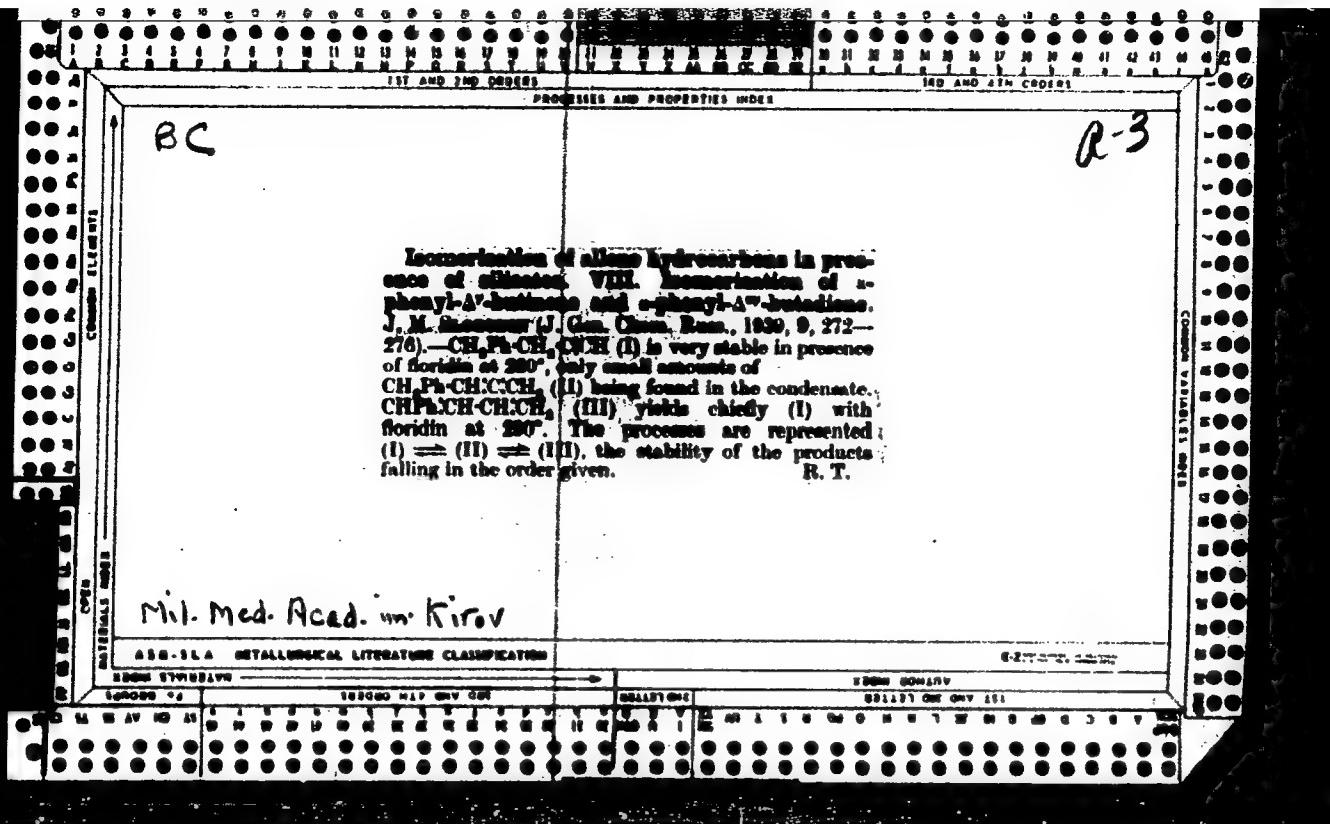
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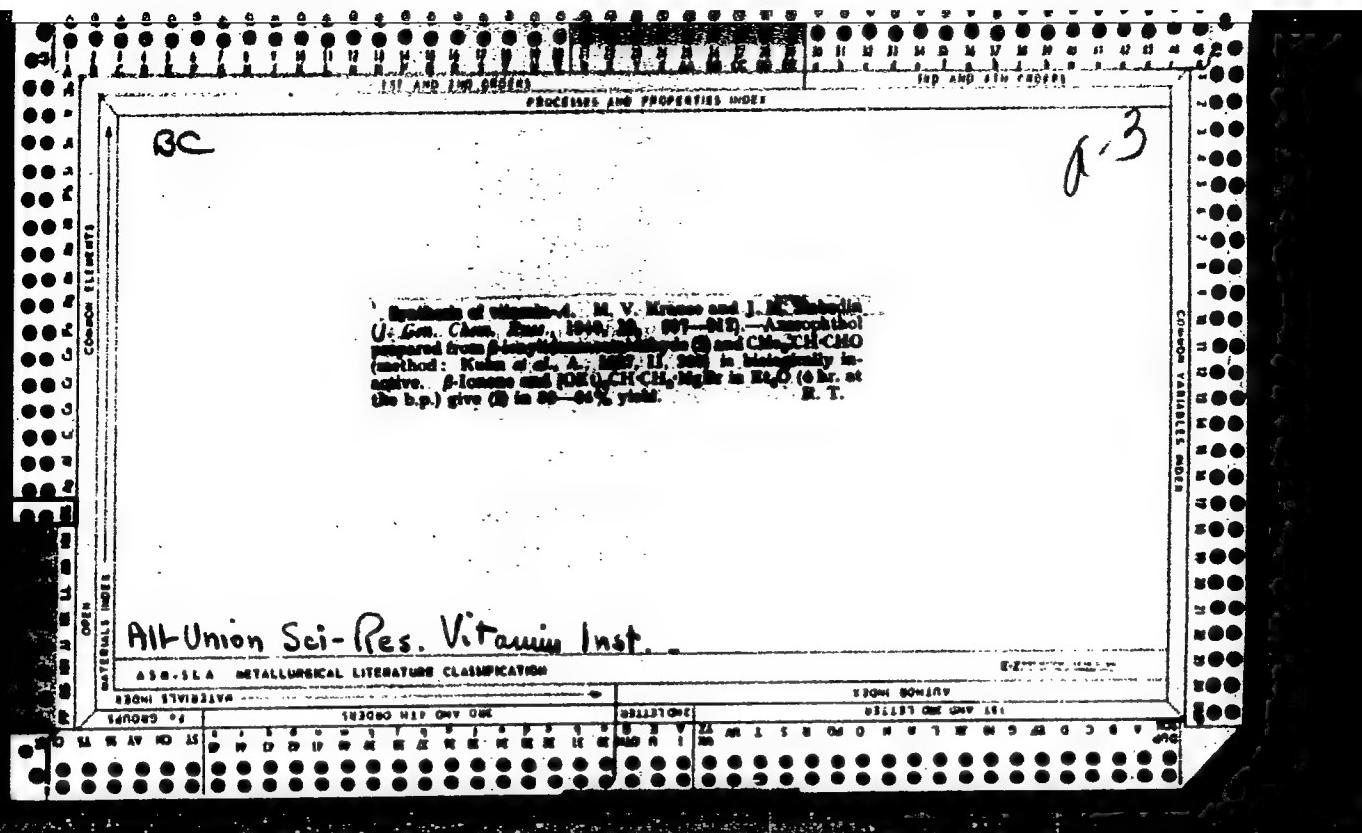
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The homomerization of allene hydrocarbons by silicates.
VII. Phenylallene. Ya. M. Slobodin. *J. Gen. Chem. (U.S.S.R.)* 8, 1220-3 (1938); cf. *C. A.* 32, 2081^a.—The cleavage of HBr from PhCH=CHCH₂Br with powd. KOH

at an initial temp. of 40-60° and final temp. of 150-70° and 100 mm. pressure by the method of Klages and Klenk (*Ber.* 39, 2562 (1906)) resulted in 5-26% of a tractive mixt. contg. 61.6% phenylallene, 30.5% methylphenylacetylene and no benzylacetylene. Cf. Ginsburg, *C. A.* 33, 3770. Chas. Blane

ASH-SEA RETENTIONAL LITERATURE CLASSIFICATION





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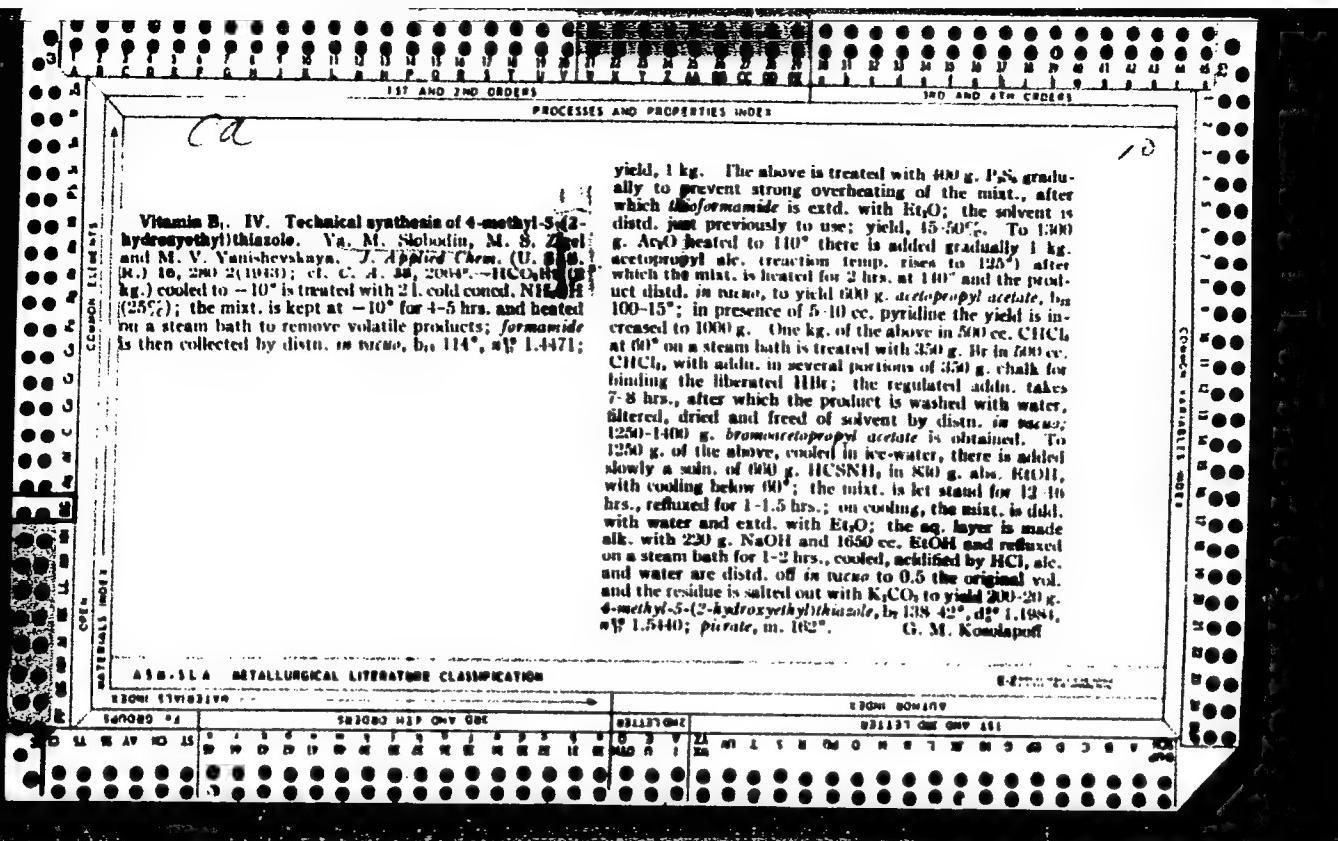
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The hydroxy analog of aneurine (vitamin B₁—Va, M. Slobodkin and M. S. Ziegel, *J. Gen. Chem. (U. S. S. R.)*, 11, 1019 (1941). The B₁ analog of vitamin B₁, with NH₂ replaced by OH, was prep'd. by methods similar to those used for the prepn. of B₁ itself and found to possess 0.55% of the aneurine activity of the latter. *Eti-2-methyl-4-hydroxy-5-pyrimidineacetate* (**I**), m. 170°¹, was obtained in 70% yield by the interaction of the crude product obtained from 30 g. (CH₃CO₂Et), 18 g. HCO₂H and 4.5 g. Na in abs. ether with 19.5 g. MeC(NH)NH₂·HCl in 90% alc.; *HCl salt*, m. 250°. *2-Methyl-4-hydroxy-5-pyrimidineacetamide* (**II**), crystals from 75% MeOH, m. 242°, was obtained by treating **I** with 25% aq. NH₃·pirate, m. 210–12°. On treatment with Br and NaOH, **II** is converted to *2-methyl-4-hydroxy-5-(aminomethyl)pyrimidine* (**III**); *HCl salt*, needle crystals from alc., m. 200°; *pirate*, m. 292°. *2-Methyl-4-hydroxy-5-(hydroxymethyl)pyrimidine* (**IV**) was obtained by treating **III** with NaNO₂ + HCl; *HCl salt*, m. 255–8°. *2-Methyl-4-hydroxy-5-(bromomethyl)pyrimidine* (**V**), m. 194–200°. Equal weights of **V** and of *4-methyl-5-(2-hydroxyethyl)thiazole* were heated together at 110° for 20 min., the residual thiazole washed out with ether, and the *[2-(2-methyl-4-hydroxy-5-pyrimidyl)methyl]-4-methyl-5-(2-hydroxyethyl)thiazolium bromide* recrystd. from 80% alc.; 11 m. (183°; the curative dose for pigeons is 0.5 mg.

E. H. Rathmann

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PREFACE AND ENCLAVE AREA

10

Vitamin B₁. Concerning 4-methyl-5-(2-hydroxyethyl)-thiazole. V. M. Slobodin and H. E. Helm's, *Doklady Akad. Nauk S. S. R.*, **39**, 152-5; *Compt. rend. Acad. sci. U. R. S. S.*, **30**, 345-7 (1943) (in English).—Reaction of 3-bromo-8-hydroxy-2-pentanone with HCSN₂ (II) by Bachman's method (cf. C. J., **30**, 7572) leads to the production of 2 closely similar isomeric thiazole derivs., which can be sep'd. by fractional crystn. of their picrate from alc. The original thiazole derivs. can be regenerated by decompp. the picrates with HCl. One picrate (A) m. 102.5° and the other (B) m. 91°. The thiazole deriv. regenerated from picrate A, namely, 4-methyl-5-(2-hydroxyethyl)thiazole, yields pure vitamin B₁ by condensation with 4-amino-5-bromomethyl-2-methylpyrimidine (III). The thiazole deriv. (III), from picrate B, reacts with III to form a product which is not vitamin B₁. Chem. evidence indicates that III is 4-methyl-5-(1-hydroxyethyl)thiazole. Formation of the latter probably involves isomerization of 5-hydroxy-3-pentanone by III to 4-hydroxy-2-pentanone followed by the latter's bromination to 3-bromo-4-hydroxy-2-pentanone, which by condensation with I yields III. J. W. Perry

414-414 METALLURGICAL LITERATURE CLASSIFICATION

870-1983-12

APPROVED FOR RELEASE: 08/25/2000

CIA-RDP86-00513R001651330003-9"

CH

7

Determination of 4-amino-8-(bromomethyl)-2-methylpyrimidine hydrobromide. Ya. M. Skubdin, Dobladý Abad, Naub S. S. S. R. 89, 237 N; *Compt. rend. acad. sci. U. R. S. S.* 89, 289-3 (1949) (in English).—All three IBr atoms in 4-amino-8-(bromomethyl)-2-methylpyrimidine dihydrobromide (I) can be titrated directly by the following procedure: Dissolve about 0.5 g. of I in 50-100 cc. of water. Add 2-3 g. ppptd. CaCO_3 and several drops of K_2CrO_4 soln. Titrate with 0.1 N AgNO_3 in the usual way. The same method can be used for direct titration of the halogen atoms in compds. of the general formula $\text{NaO}_2\text{CCH}_2\text{N}(\text{X})\text{CH}(\text{X})\text{R}$, where X is IBr or I.

J. W. Perry

410-318 METALLURGICAL LITERATURE CLASSIFICATION

EDITION 11198319A

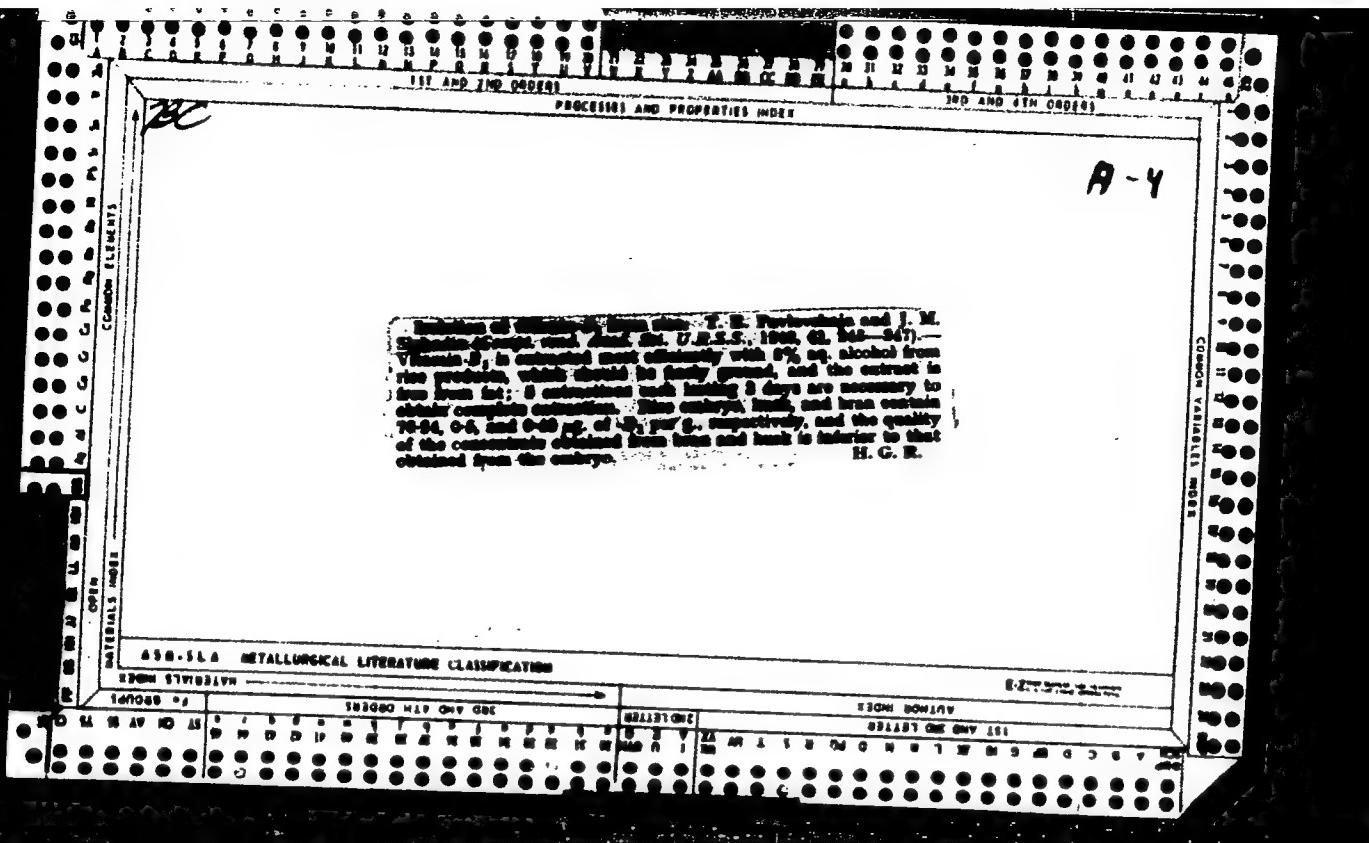
140205 44

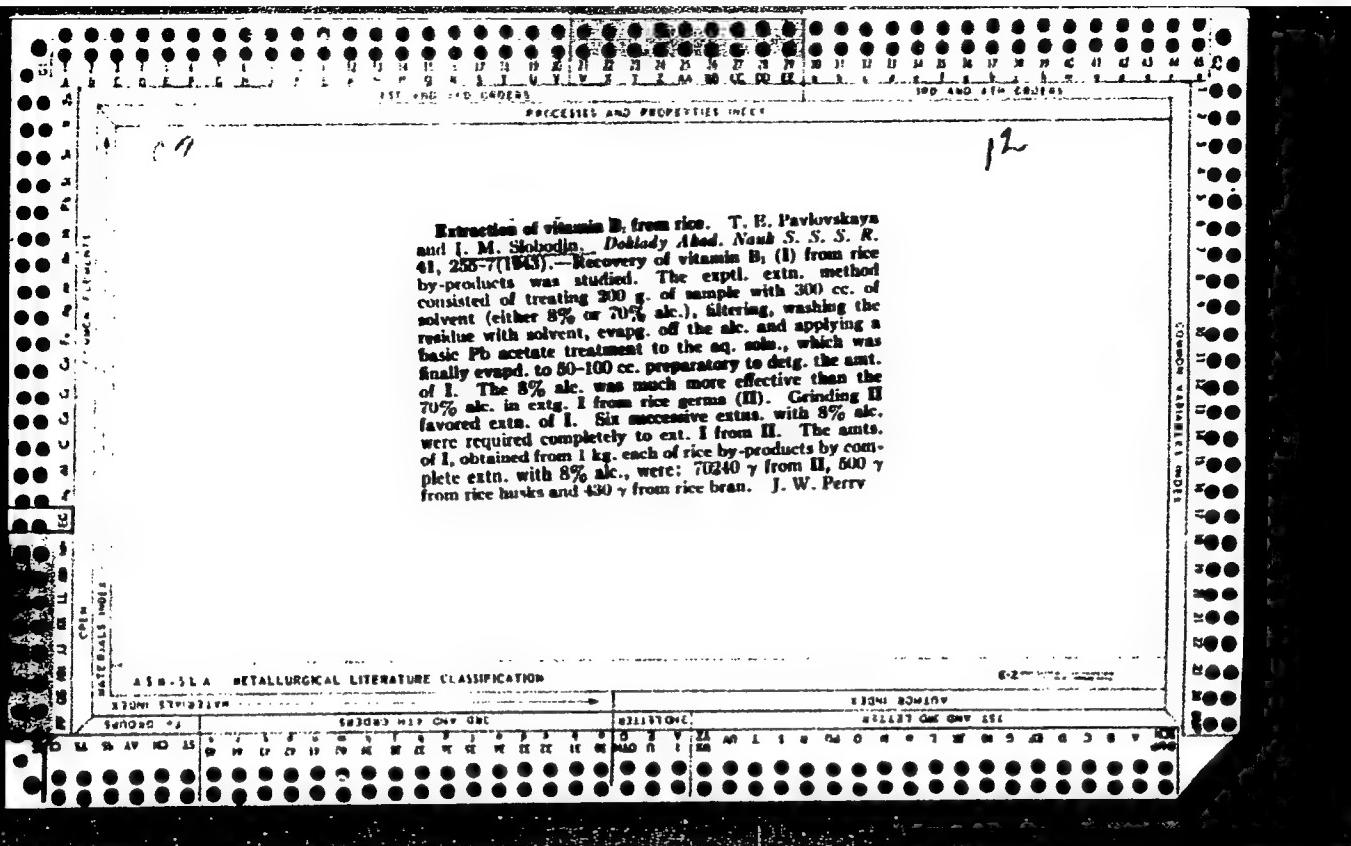
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021227 GAC QMV 151





ca.

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1st AND 2nd ORDER PROCESSES AND PROPERTIES INDEX

Digitized by srujanika@gmail.com

Diacetonefructose. Ya. M. Slobodin and A. N. Klimov (Military Med. Acad. Kirrova). *J. Russ. Chem. (U.S.S.R.)* 15, 621-4 (1945).—It was shown that the content of the *a*- and *b*-forms of diacetonefructose depends upon the amt. of H_2SO_4 used for acetonylation. With 0.5 cc. H_2SO_4 per 100 cc. Me_2CO there is formed a mixt. having 93% *a*-diacetonefructose, and 7% *b*-form. By using 7 cc. H_2SO_4 per 100 cc. Me_2CO , the mixt. contains only 4% of the *a* form, and 96% *b*-form. The analysis was conducted by titn. of m.p.s., by using a m.-p. curve which was constructed from known mixts. Pure samples were prep'd. as follows. Pure fructose was shaken with 15 parts of Me_2CO contg. 0.2% HCl for 4 hrs.; after neutralization with Pb carbonate, the soln. was filtered and concd. The residue was extd. with dry Et_2O , and the ext. was concd. and treated with petr. ether to yield *a*-diacetonefructose, m. 119° (from Et_2O). Cane sugar (25 g.), 500 cc. Me_2CO , and 20 cc. H_2SO_4 were shaken for 20 hrs., when the soln. was neutralized with NH_3 ; after which Me_2CO was removed, the residue was dissolved in Et_2O , shaken with 5% H_2SO_4 and 10% NaOH in succession, after which the solvent was removed to give a mixt. of diacetoneglucose and fructose; 10 g. of this in 130 cc. water was treated with 40 cc. 10% NaOH to ppt., a flocculent ppt. of 2 g. *b*-diacetonefructose, m. 97°. G. M. Kosolapoff

ASA-ISA METALLURGICAL LITERATURE CLASSIFICATION												S-87-1000-10000																																																																																							
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12a

1ST AND 2ND GROUPS	3RD AND 4TH GROUPS
PROCESSES AND PROPERTIES INDEX	
<p>Interaction of tetramethane with unsaturated compounds. Ya. M. Slobodin. <i>J. Gen. Chem. (U.S.S.R.)</i> 16, 1659-700 (1946).—A variety of unsatd. compds. were treated with C₄(NO₂)₄, and the color of the adducts was observed. Mono-, di- and tri-substituted ethylenes give a yellow product with most intense color arising from complexly substituted materials, although the <i>anti</i>-Br group decreases the color intensity, as does a tertiary alk. group. Tetrasubstituted ethylenes give light to dark-red colors. Dienes with isolated double bonds and allenes give a yellow color; butadiene gives an intensely yellow color; acetylenes give faint colors. The following colors were obtained with: C₂H₄, yellow; propylene, yellow; <i>o</i>-butylene, yellow; 1-pentene, yellow; Me₂CCH₂CH₃, light yellow; CH₃CH₂CO(OH)Me, light yellow; allyl alk., orange-yellow; isobutylene, yellow; pentamethylene, yellow; 2-pentene, yellow; Me₂C(CH₃)₂, yellow; cyclohexene, yellow; Me₂C(Me)₂, light red; Me₂C(Me)₂, light red; Me₂C(Me)₂, red-brown; bimethyl, yellow; bisbutenyl, yellow; allene, yellow; methyldiene, yellow; Me₂C₂CH₂, yellow; <i>tert</i>-butylethene, light yellow; Me₂C₂CH₂, orange-yellow; phenylalene, orange; butadiene, orange; isoprene, orange; propylene, orange; bispropenyl, orange; bispropenyl, light red; Me₂C(CH₂)CH₂, light red; Et₂C(CH₂)CH₂, red; Pr₂C(CH₂)CH₂, deep red; (Me₂CH)₂C(CH₂)CH₂, deep red; bisacetyl, deep red; Me₂C(CH₂)₂CH₃, red; C₂H₂, yellow; Me₂C₂CH₂, yellow; Me₂C₂CH₂, yellow; Et₂C(CH₂)₂CH₃, yellow; CH₃CC(OH)Me, colorless.</p>	
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CHARGE ELEMENTS	COMPOUNDS
MATERIALS	ITEMS

ASA-SLA METALLURGICAL LITERATURE CLASSIFICATION

1. SUBJECTS	2. SUBJECTS	3. SUBJECTS	4. SUBJECTS	5. SUBJECTS	6. SUBJECTS	7. SUBJECTS	8. SUBJECTS	9. SUBJECTS	10. SUBJECTS	11. SUBJECTS	12. SUBJECTS	13. SUBJECTS	14. SUBJECTS	15. SUBJECTS	16. SUBJECTS	17. SUBJECTS	18. SUBJECTS	19. SUBJECTS	20. SUBJECTS	21. SUBJECTS	22. SUBJECTS	23. SUBJECTS	24. SUBJECTS	25. SUBJECTS	26. SUBJECTS	27. SUBJECTS	28. SUBJECTS	29. SUBJECTS	30. SUBJECTS	31. SUBJECTS	32. SUBJECTS	33. SUBJECTS	34. SUBJECTS	35. SUBJECTS	36. SUBJECTS	37. SUBJECTS	38. SUBJECTS	39. SUBJECTS	40. SUBJECTS	41. SUBJECTS	42. SUBJECTS	43. SUBJECTS	44. SUBJECTS	45. SUBJECTS	46. SUBJECTS	47. SUBJECTS	48. SUBJECTS	49. SUBJECTS	50. SUBJECTS	51. SUBJECTS	52. SUBJECTS	53. SUBJECTS	54. SUBJECTS	55. SUBJECTS	56. SUBJECTS	57. SUBJECTS	58. SUBJECTS	59. SUBJECTS	60. SUBJECTS	61. SUBJECTS	62. SUBJECTS	63. SUBJECTS	64. SUBJECTS	65. SUBJECTS	66. SUBJECTS	67. SUBJECTS	68. SUBJECTS	69. SUBJECTS	70. SUBJECTS	71. SUBJECTS	72. SUBJECTS	73. SUBJECTS	74. SUBJECTS	75. SUBJECTS	76. SUBJECTS	77. SUBJECTS	78. SUBJECTS	79. SUBJECTS	80. SUBJECTS	81. SUBJECTS	82. SUBJECTS	83. SUBJECTS	84. SUBJECTS	85. SUBJECTS	86. SUBJECTS	87. SUBJECTS	88. SUBJECTS	89. SUBJECTS	90. SUBJECTS	91. SUBJECTS	92. SUBJECTS	93. SUBJECTS	94. SUBJECTS	95. SUBJECTS	96. SUBJECTS	97. SUBJECTS	98. SUBJECTS	99. SUBJECTS	100. SUBJECTS
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G. M. Koenigsdorff

10

Action of sulfur dioxide on hydrocarbons with conjugated acetylene-ethylene bonds. Ya. M. Slobodkin (Kirov Mst. Akad., Moscow). *J. Gen. Chem. (U.S.S.R.)* 16, 1831-4 (1946).—In the reaction of SO₂ with CH₂-CH₂C≡CH (I) and CH₂-C≡C-C≡CH (II), all attempts to isolate monomeric cyclic sulfones led to failure predictable on theoretical grounds established by Favorskii and Temnikova (*ibid.* 4, 745-81 (1934), cf. *C.A.* 29, 20279) and P. and Bozhovskii (*J. Russ. Phys. Chem. Soc.* 44, 1054-60 (1912), cf. *C.A.* 6, 2423) according to which the allene structure cannot exist in small ring systems. The polymer isolated contained one SO₂ unit per diene unit. I, b. 6°, d₂ 0.7050, (1-2 g.) and 4-5 parts SO₂ were mixed in a cooled tube, sealed, allowed to stand until pptn. took place, and the ppt. was filtered off and dried *in vacuo*; the polymers (C₄H₆SO₂)_n were colorless amorphous solids, insol. in H₂O or the usual org. solvents. With liquid SO₂, the yields were 75-80%; lower (10-12%) with SO₂ in H₂O or EtOH. Aq. SO₂ gave products corresponding to the compds. (C₄H₆SO₂H)_n. Similar treatment of II with liquid SO₂ gave 90-95% of solid polymers (aq. SO₂ gave 80-85%, EtOH solns. about 10%) and small amounts of alc.-sol., readily decomprl. products (tars); the products from liquid SO₂ corresponded to (C₄H₆SO₂)_n, as did those formed in alc., while aq. SO₂ yielded (C₄H₆SO₂H)_n. Polyphenols (pyrogallol, hydroquinone) sharply decrease the reaction rate.

G. M. Kosolapoff

ASA-SLA METALLURGICAL LITERATURE CLASSIFICATION

X3001 SLA 1974

X3002 SLA 1974

X-REF INDEX

ARTICLE INDEX

X3003 SLA 1974

X3004 SLA 1974

X-REF INDEX

ARTICLE INDEX

G

Polymerization and depolymerization. I. Depolymerization of rubberlike polymers of isobutylene. Ya. M.

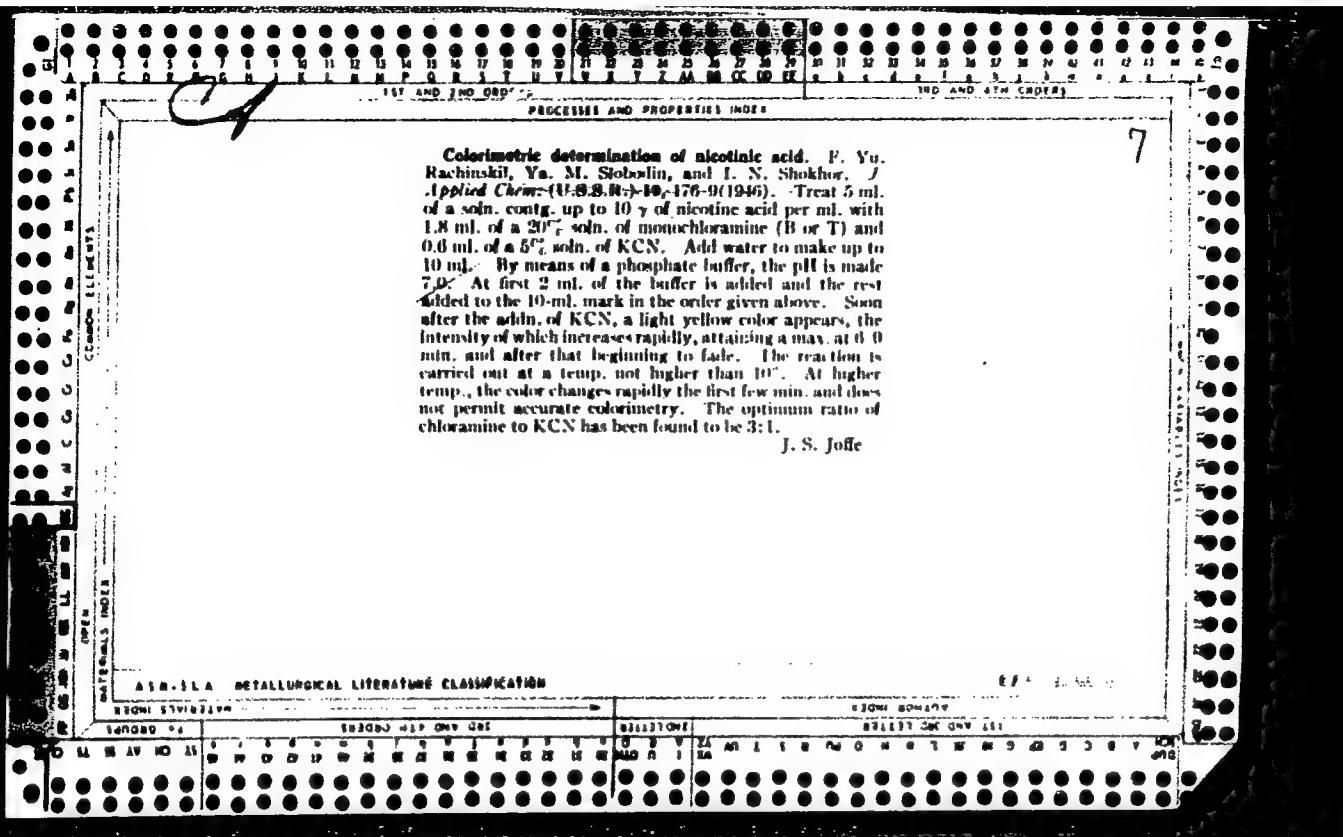
Slobodin and N. I. Matusevich (Kirov Military Acad., Leningrad). *J. Gen. Chem. (U.S.S.R.)*, 16, 2077-82 (1940) (in Russian). Thermal depolymerization of isobutylene built up gives fragments ranging from the monomer to pentamers; some cracking also occurs. A crystalline trimer was discovered. Tech. Vistanez (M_w 90,000-100,000) (100-150 g.) was heated to 323° in a distn. app. After depolymerization, the residue never exceeded 0-6%. Analyses of gases showed the presence of 1.3-3.9% satd. hydrocarbons; the unstd. product was isobutylene, while the satd. product apparently was C_4H_8 , with some C_4H_6 . The liquid portion of the distillate was fractionated to give a series of products, as follows: (1) up to 97°, 2.2%; (2) 111.1, d_{4}^{20} 0.8988, n_{D}^{20} 1.4132; (2) 97-106°, 15.1%; (28, 0.7230, 1.4152); (3) 100-12°, 10%; (29, 0, 0.7315, 1.4470, 0°, 112-20°, 5.3%; (4) 0.7370, 1.4248; (5) 120-30°, 0.7398, 1.4430; (6) 130-40°, 12.5%; (7) 143, 0.7085, 1.4430; (8) 160-70°, 5.2%; (10) 78.7, 0.7806, 1.4416; (9) 170-80°, 13.5%; (10) 8.8, 0.7824, 1.4405; (10) up to 75° at 14 mm., 4.3%; (15) 175.5, 0.7858, 1.4408; (10) 16.75-100°, 1.8%; (16) 0.7809, 1.4450; (11) 160-15°, 10.8%; (20) 0.8120, 1.4560; (12) b₄ 115-33°, 2.3%; (21) 0.8238, 1.4638; (13) b₄ 135-50°, 0.1%; (25) 0.8319, 1.4671; (14) b₄ 150-5°, 1.0%; (29) 1.4600. Fractions 8-8 crystallized partially; the isolated crystals were long needles of mol. wt. (Rast) 171.8, m. 65-6°, changing to 83.0° after recrystn. or long heating. Keeping a mixt. of isobutylene and tetraisobutylene over Na 4 years gave a small amt. of solid resembling the above product but of Rast mol. wt. 188.3; the identity of these products has not been detd.

G. M. Kosolapoff

Abs. available

D-50054

ASB-SEA METALLURGICAL LITERATURE CLASSIFICATION



35 Synth. Rub. & Allied
Products

Polymerization and depolymerization. I. Depolymerization of rubber-like polymer of isobutylene. V. M. Slobodin and N. I. Martovtsev (J. Gen. Chem. U.S.S.R., 1967, 16, 2077-82; Chem. Ab., 1967, 61, 7603).--Viscosity of molecular weight 100,000-100,000 was heated at 220°. The size of the fraction, density, molecular weight, and refractive index are given for 14 fractions. Fragments ranging from the monomer to the pentamer are obtained and some cracking also occurs. 282010.19

SLOBODIN, J. I.

PA 15T56

USSR/Chemistry - Polymers
Chemistry - Catalysis

Feb 1947

"Polymerization and Depolymerization: 2, Catalytic Thermopolymerization of Divinyl," J. M. Slobodin, F. Yu. Rachinskiy, 3 pp

"Zhur Obshch Khim" Vol XVII, No 2

The thermopolymerization of divinyl over floridine leads to the formation of a new series of cyclic forms.

Abs. available

15T56

D-50054

SLOBODIN, YA. M.

PA 15T74

USSR/Chemistry - Ascorbic Acid
Chemistry - Sorbose

Mar 1947

"Ascorbic Acid, Its Preparation and Properties: III,
The Acetonization of Sorbose," Ya. M. Slobodin, 4 pp

"Zhur Obshch Khim" Vol XVII, No 3

The acetonization of sugars leads to the formation of an equilibrium mixture of mono and diacetone derivatives. Increase of temperature shifted the equilibrium toward the formation of the monoacetone sugars, and a positive influence of metallic Al and Zn on the yields of diacetone sugar derivatives was noted.

15T74

USSR/Chemistry - Aldehydes

APPROVED FOR RELEASE: 08/25/2000, CIA-RDP86-00513R001651330003-9

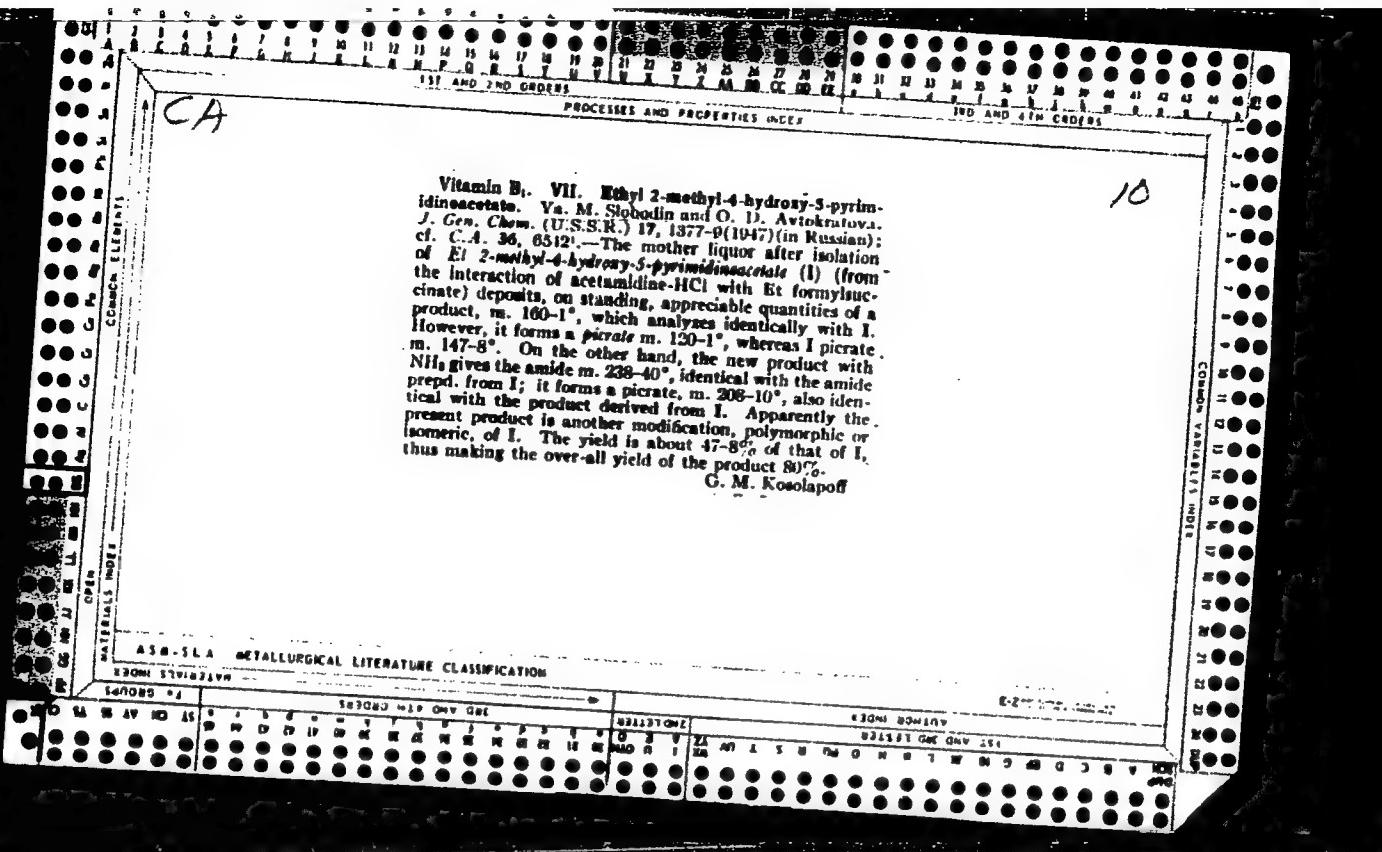
Mar 1947

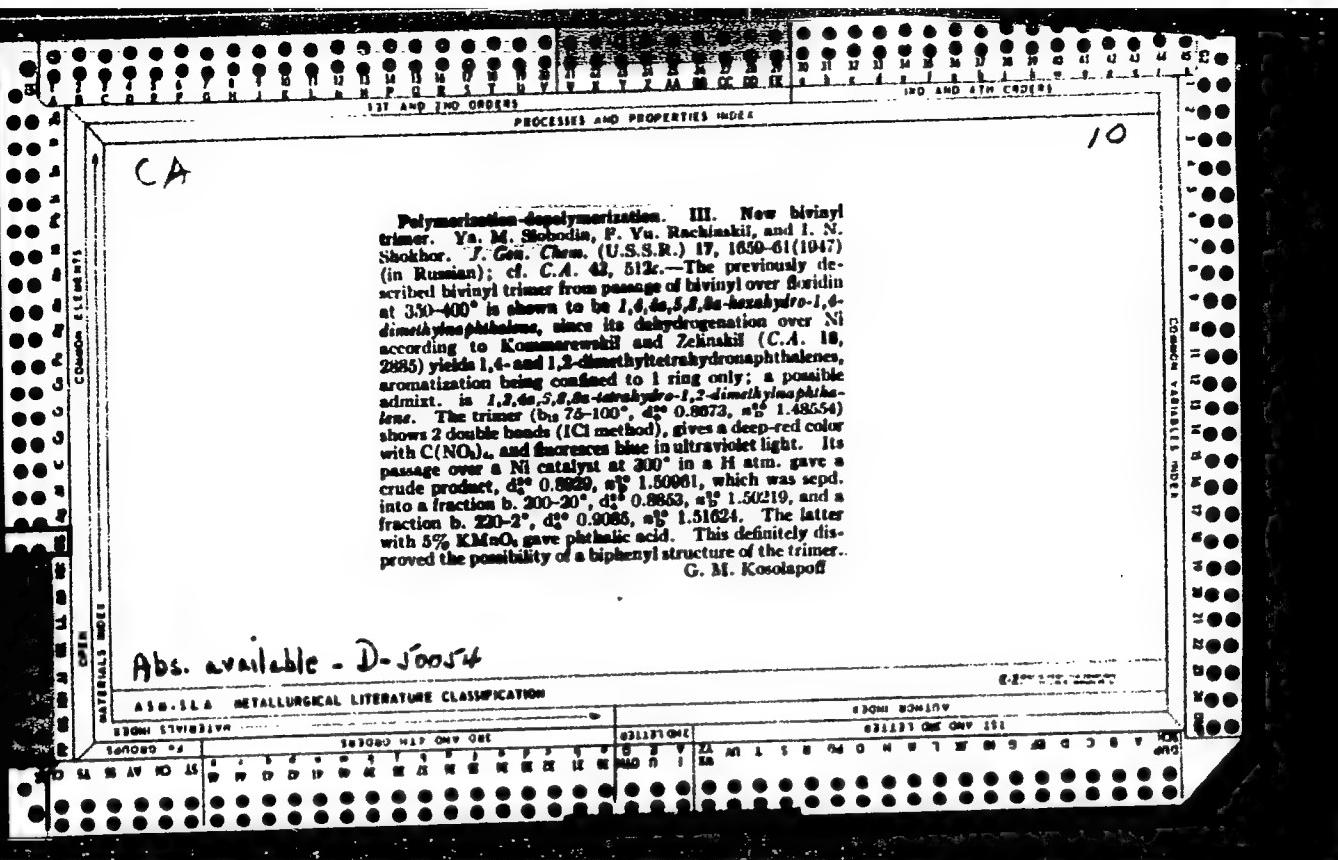
"The Reversibility of the Esteric Condensation of Aldehydes," Ya. M. Slobodin, F. Yu. Rachinskiy, O. D. Avtokratova, 6 pp

"Zhur Obshch Khim" Vol XVII, No 3

The Cannizzaro-Tishchenko reaction was found to be reversible. Equilibrium was not established in the system acetaldehyde-ethylacetate due to a number of simultaneous side reactions.

15T90





SLOBODIN, YA. M.

PA 52T14

USSR/Chemistry - 1,3-Butadiene
Chemistry - Polymers

Oct 1947

"Rubbery Cyclopolymer of Bivinyl," Ya. M. Slobodin,
F. Yu. Rachinskiy, Mil Med Acad imeni S. M. Kirov, 2

"Dok Akad Nauk SSSR" Vol LVIII, No 1

Gives data on experiments in polymerization of bivinyl,
as a result of which, properly constructed polymers
were produced. Below 150° the rubbery cyclopolymer
were accompanied by various amounts of aliphatic forms.
150° and higher, as a result of formation on the cata-
lyzer of a large amount of chains and their frequent
breaking away, polymerization is limited by formation
of polymer forms of comparatively low molecular weight.
Submitted by Academician A.A. Badanin, 14 Mar 1947.

PA 19/49T20

SLOBODIN, YA. M.

USSR/Chemistry - Polymerization, Di- Aug 46
merization
Chemistry - Vinyl Compounds

"Polymerization and Depolymerization: IV, The
Dimerization of Divinyl," Ya. M. Slobodin, F.
Yu. Bachinsky, I. N. Shokor, NII Aeed iissai
S. M. Kir'ev, 3 pp

"Zhur Obshch Khimii" Vol. VIII (LXX), No 8

Shows that during catalytic thermopolymerization
of divinyl in presence of floride dimer forms
are produced, accompanied by migration or hydro-
gen atom. Main product of dimerization is

19/49T20

USSR/Chemistry - Polymerisation, Aug 46
Dimerization (Contd.)

1,4-dimethyl-cyclohexadiene. By-product is 1,2-
dimethyl-cyclohexadiene. Labedev's dimer
(vinyl-cyclohexene) is not formed under these
conditions. Submitted 25 Jan 46.

19/49T20

SLOBODIN, YA. M.

PA 19/49T21

USER/Chemistry - Polymerization
Chemistry - Vinyl Compounds

Aug 46

"Polymerization and Depolymerization: V, Tetrameric Divinyl," Ya. M. Slobodin, F. Yu. Rachinskiy, I. N. Shokhor, Mil Med Acad imeni S. M. Kirov, 2 pp.

"Zhur Obshch Khimii" Vol IVIII (LIX), No 8

Shows that tetramer formed during thermopolymerization of divinyl in presence of floridin in the temperature range 300-400° is 9,10-dimethyl-decahydro-anthracene. Submitted 22 Jun 46.

19/49T21

SLOBODIN, YA. M.

PA 11/49T50

USSR/Chemistry - Nicotinic Acid,
Solubility of,
Aug 48

Chemistry - Isonicotinic Acid,
Solubility of,

"Solubility of Nicotinic and Isonicotinic Acids,"
Ya. M. Slobodin, M. M. Goldman, Leningrad Affil-
iate, All-Union Sci Res Vitamin Inst, 2 3/4 pp

"Zhur Priklad Khimii" Vol XXI, No 8

Determines solubility of nicotinic acid in water,
alcohol and saturated saline solution. Determines
solubility in water of sodium nicotinate and the
hydrochloride of nicotinic acid. Shows that

11/49T50

USSR/Chemistry - Nicotinic Acid,
Solubility of (Contd) Aug 48

sodium nicotinate has composition $C_6H_4O_2N_2Na \cdot \frac{1}{2} H_2O$.
Determines solubility of isonicotinic acid in
water. Submitted 5 Sep 47.

11/49T50

LI. Dec 50

SLCBODIN YA. M.

11 Dec 50

USSR/ Chemistry - Fuels, Synthetic
Elastomers

"Spectra of Combination Dispersion and the Process of Isobutene Polymerization,"
Ye. F. Gross, Corr Mem, Acad Sci USSR, K. B. Nel'son, Ya. M. Slotodin, Leningrad State
U imeni A. A. Zhdanov, Mil Med Acad imeni S. M. Kirov

"Dok Ak Nauk SSSR" Vol LXXV, No 5, pp 697-700

Constitution of the dimer (I), trimer (II), teramer (III), pentamer (IV), and polymer
having av mol wt of 800 (V) detd from their spectra. Found I to consist of the 2
possible isomers; II of isomers having double bond both in middle of chain and at end
while mol of III, IV, and V have double bonds at end of chains only.

PA 172T9

Ya. M. SLOBODIN

PA 19474:

USSR/Chemistry - Organic Synthesis
Drugs

Nov 51

"Synthesis of Methylcyclopropylcarbinol," Ya. M.
Slobodin, I. N. Shokhor

"Zhur Obshch Khim" Vol XXI, No 11, pp 2001-2005

Worked out convenient lab method for reacting
acetyltrimethylene with Al isopropylate to prep
methylcyclopropylcarbinol, which had characteris-
tic properties. Yield was 87% of theoretical and
can be increased. Obtained spectra of combination
scattering of light for methylcyclopropylcarbinol
and acetyltrimethylene.

194T47

10

CP

Structure of Gustavson's hydrocarbon. II. Stepanov synthesis of epropentane. Ya. M. Shchodin and I. N. Shokhar. *Zhur. Obshch. Khim.* [J. Gen. Chem.] 21, 2005-11 (1951); cf. Gustavson, *J. Am. Chem. Soc.* 80, 237 (1958); *J. Polym. Chem.* [2] 54, 105 (1968); 54, 93 (1967); *C.A.* 63, 6014. —Raman analysis of Gustavson's hydrocarbon mirt. showed that the principal components are methylenecyclobutane and $\text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_2$. The stepwise synthesis of epropentane (Zelinskii and Kravets, *C.A.* 7, 1178) gives methylenecyclobutane only, since the 3-membered ring isomeric to a 4-membered ring, confirming the mechanism of isomerization suggested by Favorskii and Batalin (*C.A.* 9, 1780). $\text{C}(\text{CH}_2\text{OH})_2$ (130 g.) and 102 g. Ac_2O reduced 8 hrs. gave several fractions, including 50% 1,3,5-trisubstituted dibromide, bp 202-5°, which crystallizes in part owing to transposition of Ac groups, depositing pentanoylaldehyde; the higher fractions contained tetra- and triacetates. The product treated with red P and Br in CHCl_3 with ice cooling gave 34% 2,2-dibromoethyl-1,3-propanediol diacetate, bp 182-7°, d_4^{20} 1.6518, mp 1.40591, which (10 g.), treated with 180 ml. EtOH , 16 ml. H_2O , and 80 g. Zn dust 3

hrs. on the steam bath gave 1,1-cyclopropanedimethanol diacetate, 44%, bp 138-7°, d_4^{20} 1.0817, mp 1.44450, which boiled 6 hrs. with satd. K_2CO_3 soln. gave 45% 1,1-cyclopropanedimethanol, bp 123-7°, d_4^{20} 1.0710, mp 1.06425, n_4^2 1.5234, partly crysg. on standing. A better procedure was to treat the bromide with Zn , sat. the melt. with NH_3 at 0°, and let stand 2-3 days. The product above with PbBr_2 and pyridine gave 43% of the bis(bromomethyl)cyclopropane, bp 83-7°, d_4^{20} 1.7805, mp 1.33443, n_4^2 1.5736. This with Zn dust in EtOH with simultaneous dist. gave 67% hydrocarbon (II), bp 41.5-2.5°, d_4^{20} 0.7357, mp 1.4162, n_4^2 20.37, which, hydrogenated over Pt oxide, readily took up 90% (of theoretical) H. Its const. and behavior confirm its structure as methylenecyclobutene and not a trace of epropentane was found. Hydrogenation of the Gustavson hydrocarbon gives a time curve with a break indicating hydrogenation of 2 components, whereas II gave a smooth curve; ozonolysis gave cyclohexanone and HCO_2H only. The isomerization to the cyclohexene ring causes to occur

mainly during the treatment of the dibromide, probably with formation of 1-bromo-1-(bromomethyl)cyclobutene from 1,1-bis(bromomethyl)cyclopropane. The Raman spectrum of the dibromide contains elements of 3- and 4-membered rings.

G. M. Krestopal

SEARCHED, SERIALIZED

USSR/Chemistry - Fuels
Plastics

Apr 51

"Spectra of Combination Scattering of Light of Low-Molecular Polymers and the Polymerization of Isobutene," Ye. F. Gross, L. V. Nelson, Ya. A. Slobodin, State U imeni N. A. Zhdanov, Leningrad

"Zhur Fiz Khim" Vol XIV, No 4, pp 504-512

Obtained spectra of combination scattering of light for dimer, trimer, tetramer, pentamer, and polymer of isobutene with av mol wt 800. Analyzed vibration frequency of $=C=CH_2$ group. Detd positions of C=C bonds in various forms of each polymer, concluded polymers tended toward mol structure with C=C bond at end of chain.

180T34

SLOBODIN, Ya. M.

USSR/Chemistry - Polymers

Jan 52

"Polymerization-Depolymerization. VII. Structure of the Tetramer of Isobutylene," Ya. M. Slobodin, Ye. M. Markova

"Zhur Obsch Khim" Vol XXII, No 1, pp 102-105

Investigation by Raman spectra of products of polymerization of isobutene in presence of H₂SO₄ disclosed presence of following tetramers: (a) 2, 4, 4, 6, 6, 8, 8-heptamethylnonene-1, the chief product (presence of isomers with different Me group distribution is possible); (b) 2,2,6,6-tetramethyl-4-neopentyloheptene-3 (only approx 10% of tetramer

207T20

USSR/Chemistry - Polymers (Contd)

Jan 52

content, contrary to scheme of F. Whitmore). No 2,4,4,6,6,8,8-heptamethylnonene-2 (present according to Whitmore) was detected.

207T20

SLOBODIN, Ya. M.

USSR/Chemistry - Polymers

Jan 52

"Polymerization-Depolymerization. VIII. Action of Metallic Sodium on 1,4-Dibromobutene-2," Ya. M. Slobodin, N. M. Vinokurova

"Zhur Obshch Khim" Vol XXII, No 1, pp 105-109

Debromination of 1,4-dibromobutene-2 (I) with Na in dry ether proceeds by splitting off of Br to form 1,8-dibromoocadiene-2,6, which is further converted to octadiene-1,6, dodecatriene, and more highly polymerized products. Reaction mech is complex. High-polymer products must be increasingly unsatd. Upon splitting off of Br from I, cyclic hydrocarbons with 4 or 8 C atoms are not formed, in agreement with strain theory.

207721

SLOBODIN, YA. M.

Slobodin, Ya. M., and Shokhor, I. N.- "Cyclopropylacetylene." (p. 195)

SO: Journal of General Chemistry, (Zhurnal Obshchei Khimii), 1952, Vol. 22, No. 2

USSR/Chemistry - Hydrocarbons

Feb 52

"Action of PCl_3 and PBr_3 on Methylcyclopropylcarbinol," Ya. M. Slobodin, I. N. Shokhor

"Zhur Obshch Khim" Vol XXII, No 2, pp 208-214

By means of Raman spectroscopy, identified products of interaction of PBr_3 with methylcyclopropylcarbinol (I) as α -bromoethylcyclopropane and about 70% 5-bromopentene-2. Established that α -chloroethylcyclopropane, product of interaction of PCl_3 with I, undergoes opening of ring only to small extent. During its prepn and treatment it is subjected to

209T15

USSR/Chemistry - Hydrocarbons (Contd)

Feb 52

partial splitting off of HCl (10-15%) to form 75% vinylcyclopropane (II) and 25% trans-piperylene. Synthesized II and took its Raman spectrum.

209T15

SLOBODIN, YA.M.

USSR/Chemistry - Butadiene

Apr 52

"The Configuration of Crystalline Butadiene Bromides," Ya. M. Slobodin, S. A. Zaboyev

"Zhur Obshch Khim" Vol XXII, No 4, pp 603,604

The combination dispersion spectra of butadiene bromides were investigated. The data obtained in this manner show that butadiene, in reacting with bromide, enters into the reaction in its "curved form," which leads to formation of cis-dibromide. The high-melting tetrabromide had a dl-configuration, while the low-melting tetrabromide has a meso-configuration.

224T35

Skobodin, Ya. M.

Chemical Abst.
Vol. 48 No. 6
Mar. 25, 1954

Electronic Phenomena and Spectra

The configuration of the crystalline bromides of butadiene
consists of Ya. M. Skobodin and S. A. Zaboty. J. Gen. Chem.
U.S.S.R. 22, 603 (1952) (Engl. translation). See C.A. 45,
74336. H. J. H.

USSR/Chemistry - Hydrocarbon Isomer-
ization Nov 52

23 T26
"Isomerization of Allene Hydrocarbons With
Silicates: IX. Isomerization of Hexadiene-1, 2,"
Ya. M. Slobodin.

"Zhur Obshch Khim" Vol 22, No 11, pp 1958-1964

It was shown that hexadiene-1, 2, in contact
with floridin, is isomerized to a mixt contain-
ing unchanged allene, conjugated diene, mono-
substituted acetylene and disubstituted acety-
lene. The conjugated diene and monosubstituted

238T26

acetylene are the primary products of the iso-
merization of allene, while the disubstituted
acetylene is the secondary product and is iso-
merized directly from the monosubstituted acety-
lene. On the basis of spectroscopic data, it may
be assumed that the disubstituted acetylene con-
tains a methyl group, as one of the substitutes,
f.e.: that it is hexyne-2. Hexadiene-2, 4 is the
conjugated diene which is formed during the iso-
merization of hexadiene-1, 2 over floridin.

238T26

SLOBODIN, Ya. M.

Chemical Abst.
Vol. 48 No. 9
May 10, 1954
Organic Chemistry

① chem

Isomerization of alkene hydrocarbons by silicates. IX.
Isomerization of 1,2-hexadiene. Ya. M. Slobodin. J.
Gen. Chem. U.S.S.R. 22, 2007-12 (1952) (Engl. translation).
See C.A. 47, 8630x. H. L. H.

Stohodin, Ya. M.

CZECH

Isomerization of allenic hydrocarbons by the silicates.
Ya. M. Stohodin. Sbornik Statei
Obozrechii Khim., 2, 311-5 (1953); *C. A.*, 33, 6258; 48,
50034.—Me₂PrCOH (110 g.) treated at 60° with 108 g. Br-
and allowed to stand overnight yielded 175 g. Me₂CBrCH-
BrEt, b₂ 81-8°, Raman spectrum (cm.⁻¹) 181(8), 295(5),
311(2), 483(4), 615(10), 638(3), 811(0), 1036(1), 1163(5),
1201(2), 1225(3), 1430(2), 1458(2), 2377(3), 2330(4), 2984
(3). This was slowly added to refluxing alc. KOH, sold,
and the mixt. refluxed 2 hrs. longer, yielding 98 g. mixed
MeC(CH₂)CHBrEt and Me₂C:CHBrEt, b₂ 61-2°, which,
heated in 50-g. portions with 1:3 alc. KOH in an autoclave
4 hrs. at 150°, yielded a hydrocarbon, b. 70-5°, d₄ 0.7175,
n_D²⁰ 1.4320, shown by its Raman spectrum to be an admixt.
with MeCH:CHCMe:CH₂, from which it was freed by heating
with maleic anhydride, finally with Na, followed by distn.
over Na, which gave, from 21 g. crude product, only 5 g.
fairly pure Me₂C:CHMe (I), b. 70-70.5°, Raman spec-
trum (cm.⁻¹) 214(6), 335(8), 342(3), 541(5), 713(4), 1022(6),
1231(10), 1374(1), 1402(2), 1444(2), 1470(4), and 1373(1).
This passed over borofrit at 260° gave some 50% polymeric
material, along with some 50% monomeric material con-
sisting of 60% product with 2 double bonds and 44% olefin,
as shown by the uptake of Br; the phys. properties of the
catalyze indicate the presence of 51% unchanged I, 2%
conjugated diene, and some 44% Me₂C:CHEt. No acety-
lenic products were detected. Fairly pure I, b. 70-70.5°, n_D²⁰
1.43191, d₄ 0.7305.

G. M. Kusolajoff

Slobodin, Ye. M.

3

CZECH

Two of Quayle's hydrocarbons. IV. Intermediate products of stepwise synthesis of hydrocarbons. V. Ye. M. Slobodin and I. N. Shashou. Soviet State Duma Akad. Nauk SSSR 3, 237(1965); et. Gustavson, Israel. Imperial Akad. Nauk SSSR 3, 237(1965); C.A. 48, 12021d. — In the stepwise synthesis of sphenolene, during the closure of the 1st 3-membered ring there takes place a partial transformation into a 4-membered ring, which change is completed when the final product is prep'd. Olefin formation occurs to a lesser degree. The cleavage of Br in the final step in the presence of Na₂CO₃ and NaI yields a hydrocarbon mixt. containing about 10% spirocyclics. The 1,1-dimethylcyclopropane (for, et al.) prep'd. from the diacetate contains a mixt. of products with 3- and 4-membered rings. Oxidation of this with K₂C₂O₄ in ac. H₂SO₄ gave cyclopropanedicarboxylic acid and (CH₃CO₂)₂. Methyl-methylene cyclobutane (23 g.) in Et₂O treated with 65% Na with ice cooling yielded 65% 1-hydroxymethyl-1-bromoacylcobutane, b.p. 78-80°, d₄ 1.7044, n_D²⁰ 1.59551. Raman spectrum (cm.⁻¹): 194(2), 202(8), 432(3), 611(3), 641(10), 676(2), 705(7), 800(6), 922(4), 935(1), 101(2), 122(2), 132(4), 139(1), 142(4), and 146(5). This with Zn dust yielded 80% pure methylene cyclobutane, b.p. 41.6-5. IR: 1.4186. Raman spectrum: 352(5), 374(1), 668(5), 757(1), 874(1), 999(3), 952(10), 1101(2), 1395(3), 1427(2), 1670(8), 2367(1), 2938(8), 2949(8), and 3068(2). Refluxing the di bromide with AgOAc and AcOH 6 hrs. gave pure 1-(hydroxymethyl)cyclobutanol.

OVER

RE
gel

Y.A. M. Slobodin
diacetate, b.p. 100-10°. Raman spectrum 103(6), 219(4),
371(2), 427(2), 470(8), 638(4), 784(4), 793(4), 845(2),
87~(2), 918(8), 971(5), 1032(4), 1069(4), 1108(4), 1174(2),
1445(3), 1691(3), and 1743(6). The hydrocarbon obtained
from Zn dust and 1,1-bis(bromoethyl)cyclopropane (*loc.*
cit.) had the Raman spectrum: 353(4), 371(2), 657(5),
77(10.5), 573(2), 908(3), 955(10), 1191(2), 1391(2), 1424(2),
1654(0.5), 1679(8), 2828(1), 3050(1), 2900(3), 2924(4),
2958(8), and 3063(8). If this di-Br deriv. (11 g.) is added to
50 ml. EtOH, 17.5 ml. H₂O, 15 g. Zn dust, 2.8 g. Na₂CO₃,
and 0.75 g. NaI, the resulting hydrocarbon, b. 30-42°, has
the Raman spectrum: 304(8), 352(4), 374(2), 583(2),
613(1), 658(5), 777(1), 874(4), 906(5), 952(10), 1033(2),
1155(1), 1181(3), 1303(5), 1437(1), 1654(0.5), 1678(7),
2828(2), 2861(3), 2908(3), 2938(3), 2950(5), and 3069(5).

G. M. Kostyukoff

7/2

SLOBODIN, Ya. M. and SHOKHOR, I. N.

Cyclopropane (1,5-Spiro)-2,4,6,-Triketo-Hexahydro Pyrimidine, page 850,
Sbornik statey po obshchey khimii (Collection of Papers on General
Chemistry), Vol II, Moscow-Leningrad, 1953, pages 1680-1686.

SLOBODIN, Ya. M.

The structure of Gustavson's hydrocarbon. III. Action
of zinc dust on tetrahalopeptanes. Ya. M. Slobodin
and I. N. Shokhar. J. Gen. Chem. U.S.S.R. 23, 37-41
(1953) (Engl. translation).—See C.A. 48, 5432. H. L. H.

SLOBODIN, Ya. M.

Chem Abstr v48

1-25-50

Organic Chemistry

The structure of Gustavson's hydrocarbon. III. Action of zinc dust on tetrahaloneopentanes. Ya. M. Slobodin and I. N. Shokhor. Zhur. Osnikov Khim. 23, 42-6 (1958); cf. C.A. 50, 6598e, 10112c.—Zn dust in aq. AcNH₂ reacts with tetrahaloneopentanes yielding a mixt. of hydrocarbons consisting of methylenecyclobutane (I), spiropentane (II) and 2-methyl-1-butene (III). The content of II rises as one substitutes tetraiodoneopentane for the tetra-Cl analog; the tetra-Br analog gives intermediate yield. Yield of II from tetraiodo deriv. is not affected by addn. of Na₂CO₃ which confirms its role as the agent which regenerates the iodide ions. Possibly the variation of yield of II is related to variation of atomic radius of the halogens involved. PCl₅ (140 g.) was treated with SO₂, and the mixt. of SOCl₂-POCl₃ was treated with 14 g. pentaerythritol (IV), followed slowly by 8 g. pyridine with ice cooling; after 3 hrs. refluxing the mixt. was quenched in ice yielding 21 g. C(CH₂Cl)₄ (V), m. 97°. PBr₃ and IV gave C(CH₂Br)₄ (VI), while treatment of this with NaI in MeEtCO gave C(CH₂I)₄ (VII). V failed to react with Zn dust in aq. EtOH in the presence of NaI and Na₂CO₃. Heating 21 g. V, with 25 g. Zn dust, 10.6 g. Na₂CO₃, 2.5 g. NaI, and (CH₃OH)₂ to 180-90° gave some 3 g. low-boiling material, b. about 80°, identified as an unsatd. chloride of unknown structure. Heating 21 g. V, 90 g. dry AcNH₂, 15 g. Na₂CO₃, and 50 g. Zn dust to 170-80° led to rapid formation of a hydrocarbon in 40% yield; after distn. over Na this b. 33-42° (mostly 38-42°). The Raman spectrum showed the presence of I, II, and III in 80-5%, 10%, and 5-10% ratio, resp. When NaI (5 g.) was added the yield of total hydrocarbon rose to 45% and the content of II rose to 30-40%, that of III to 10-20%, and I dropped to 50%. Similar reaction of VI in aq. EtOH gave 80% hydrocarbons: 80-90% I and 10-15% III; if Na₂CO₃ and NaI are added the hydrocarbon yield rises to 78-88% with 24-8% II, 54-8% I, 13-18% III, and 1-3% 1,1-dimethylcyclopropane; run in AcNH₂ with Na₂CO₃ added the hydrocarbon yield is 40%; 20-30% II, 50-60% I, and 10-20% III; in presence of both NaI and Na₂CO₃ the total yield is 38%; 47-60% II, 10-36% I, and 17-30% III. VII reacts with Zn dust very slowly in aq. EtOH. In AcNH₂ with Na₂CO₃ and NaI the total yield of hydrocarbons rises to 80%, contg. 50% II, 40% I, and 10% III; without these addends the total yield is still 80%; 50% II, 25% I, and 25% III.

Slobodin, Ya. M.

Chemical Abst.
Vol. 48 No. 3
Feb. 10, 1954
Organic Chemistry

FM

Ethylenone. Ya. M. Slobodin and N. M. Khokhlacheva, Zhar. Obshch. Khim., 23, 1453 (1953); cf. Braun and Teulfert, C.A. 42, 2943.—*Pyrlylene* (1-penten-3-yne), b.p. 67.8°, η_{D}^{20} 0.7412, ν_{max}^{KBr} 1,457(?) does not react with reagents typical of monosubstituted acetylenes. On hydrogenation it adds 6 H atoms over Pt black. Raman spectrum shows the following lines (cm^{-1}): 238(3), 259(3), 319(3), 361(2), 397(2), 422(2), 468(5), 518(5), 548(5), 659(2), 678(1), 703(2), 732(2), 791(1), 839(1), 913(1), 1029(1), 1082(8), 1106(1), 1163(10), 1274(2), 1385(6), 1389(5), 1412(8), 1550(1), 1586(1), 1609(10), 1618(5), 1833(4), 2088(1), 2137(1), 2159(4), 2237(10), 2339(1), 2380(1), 2391(8), 2394(4), 3012(3), 3098(3). The 1600 and 2200 region lines indicate the double and the triple bond, resp., with conjugation since 1609 and 1618 are weak. The 2237 cm^{-1} frequency indicates disubstituted acetylene. *Dimethylpiperazine* (cf. B. and T., loc. cit.), b.p. 73–5°, has the Raman spectrum (cm^{-1}): 290(2), 856(1), 341(1), 809(1), 952(1), 1020(1), 1049(1), 1124(3), 1191(1), 1228(3), 1266(1), 1308(3), 1374(5), 1411(2), 1439(2), 1458(4), 1531(3), 1556(4), 1650(20), 2232(2), 2313(1), 2491(3), 2880(3), 2921(1), 2939(1). The amine undergoes rapid tar formation when illuminated; pure specimens have η_{D}^{20} 0.8024, ν_{max}^{KBr} 1,4118, which agree in M_{RD} with $\text{C}_4\text{H}_{11}\text{N}$ with 3 double bonds. The Raman spectrum suggests that it is not an individual but a mixt. containing an acetylenic amine; the principal constituent appears to be $\text{Me}_2\text{NCMe}:\text{CHCH:CH}_2$, while the impurity may be $\text{Me}_2\text{CCH}_2\text{CH}_2\text{NMe}_2$. Exhaustive methylation yields the same hydrocarbon with conjugated olefin-acetylene bonds. Exhaustive methylation of $\text{CH}_2=\text{CH}(\text{CH}_3)_2\text{NM}_2\text{OH}$ gave *piperylene*, MeCH:CHCH:CH_2 , whose Raman spectrum contains the following lines (cm^{-1}): 385(5), 478(2), 618(1), 899(2), 952(2), 1034(1), 1106(0.5), 1167(3), 1191(1), 1245(10), 1295(8), 1288(2), 1435(4), 1468(4), 1606(3), 1645(10). Thus it is a cis isomer. The product from the tetrabromide is the trans form. Cf. C.A. 46, 10112e. G. M. Kosolapoff

Slobodin, Ya. M.

5

Pyrylene. ^{v.a.} M. Slobodin and N. M. Khokhlocheva.
J. Gen. Chem. U.S.S.R. 23, 167-8 (1953) (Engl. translation).—See C.A. 48, 1233g. H. L. H. ✓

Slobodin, V. M.

3

Chem

Decomposition of trimethylcetylammonium hydroxide.
V. M. Slobodin and I. N. Shekhor. J. Gen. Chem.
U.S.S.R. 23, 767-8 (1953) (Engl. translation). See C.A.
48, 44321. H. L. H.

SLOBODIN, Ya. M.

Chemical Abst.
Vol. 48 No. 8
Apr. 25, 1954
Organic Chemistry

(2) chem, fuels

Synthesis of methyl cyclopropyl ketone by exhaustive methylation. Ya. M. Slobodin and N. A. Solzhenova. Zhur. Obshchel Khim. 23, 886-7 (1953); cf. C.A. 46, 7053h. Treatment in the cold of $\text{Ac}(\text{CH}_2)_2\text{Br}$ with a slight excess of Me_3N gave $\text{AcCH}_2\text{CH}_2\text{CH}_2\text{NMe}_2\text{Br}$, which, slowly distd. with slight excess 40% KOH, yielded 40-5%. *Methyl cyclopropyl ketone*, b. 111-11.5°, d_2^{20} 0.8947, n_{D}^{20} 1.4220; 2,4-dinitrophenylhydrazone, m. 136-8°. Use of Ag_2O gave vanishingly low yields. The product was further identified by its Raman spectrum. G. M. Kosolapoff

SLOBODIN, YA. M.

Sep 53

USSR/Chemistry - Hydrocarbons

"Concerning 1, 1-Dimethylcyclopropane," Ya. M. Slobodin, V.I. Grigor'yeva, and Ya.E. Shtulyakov-skiy, Leningrad Sci-Res Inst for the Conversion of Petroleum and the Production of Synthetic Liquid Fuel

Zhur Obshch Khim, Vol 23, No 9, pp 1480-1485

The action of Br on 1, 1-dimethylcyclopropane (I) produces a mixture of bromides containing 40% of trimethyl-ethylene bromide and 60% of symmetrical methyl-ethyl-ethylene bromide. The splitting off

268728

of Br from the mixture of bromides obtained leads to the formation of trimethylethylene (II) and asymmetrical methyl-ethyl-ethylene in the same proportion. The hydrogenation of I at 150° over Ni deposited on distomaceous earth, leads to the formation of isopentane. When there is a deficiency of H during the hydrogenation of I, the resulting hydrocarbon mixt, in addition to unchanged I, contains II.

268728

Synthesis of 1,1-dialkylcyclopropanes from aldehydes.
Va. M. Slobodin, V. I. Grigor'eva, and Ya. E. Smolyanina
Kovskii (Sci. Research Inst. Petroleum Processing and
Artificial Liquid Fuel, Leningrad). *Zhur. Obschchestva Khim.*

23, 1065-7(1951).—The following method is a generally useful synthesis of 1,1-dialkylcyclopropanes. To 17 g. KOH in 75 ml. EtOH was slowly added at 40° a mixt. of 22 g. MeEtCHCHO, 65 ml. 25% formalin, and 30 ml. EtOH; the mixture was then heated 18 hrs. to 80°, concd., extd. with Et₂O 5-6 hrs., and the ext. distd., yielding 55% *MeEtC(CH₃OH)₂*, b₄ 111-14°, m. 43°. This with an equimolar amt. of PbBr₂ heated to 100°, and finally 18 hrs. at 150° gave 26% 1,3-dibromo-2-methyl-2-ethylpropane, b₄ 78°, b₂ 82°, d₄ 1.5075, n_D²⁰ 1.5073; Raman spectrum 186(2), 242(3), 312(1), 336(0.5), 371(1), 430(2), 414(2), 501(2), 595(0.5), 630(7), 655(10), 695(2), 730(6), 778(2), 826(3), 858(4), 888(1), 928(2), 990(1), 1055(1), 1172(0.5), 1192(0.5), 1203(2), 1300(0.5), 1341(0.5), and 1443(6.5) cm.⁻¹. This (14.5 g.) added gradually to boiling mixt. of 31 g. Zn dust, 45 ml. EtOH, and 5 ml. H₂O yielded on continuous distn. of the reaction products from the mixt. 03% 1-methyl-1-ethylcyclopropane, b. 56.5-7.0°, d₄ 0.7013, n_D²⁰ 1.5888; Raman spectrum 100(0.5), 205(0.5), 302(1), 415(1), 431(1), 446(1), 479(4), 674(10), 736(1), 783(1), 874(1), 881(6), 934(7), 1007(5), 1067(4), 1115(2), 1230(5).

1285(3), 1388(1), 1435(3), 1456(3), 2033(6), 2060(6), 2994(20), and 3058(5). Similarly, 46.4 g. Me₂CHCH-MeCHO, 90 ml. EtOH, 130 ml. 25% formalin, and 35 g. KOH in 150 ml. EtOH gave 46% *HOC(CH₃)CMe(CH₃)CH₂OH*, b₄ 139-40°, m. 56-7°, which with PBr₃ gave 33% *BrCH₂CMe(CH₃)CH₂Br*, b₄ 123-5°, d₄ 1.5408, n_D²⁰ 1.6073, which with Zn dust as above gave 77% 1-methyl-1-isopropylcyclopropane, b. 83°, d₄ 0.7215, n_D²⁰ 1.4000; Raman spectrum was: 271(2), 309(2), 348(2), 372(1), 392(1), 429(3), 501(2), 649(1), 663(10), 715(1), 778(1), 841(8), 849(5), 932(9), 1004(6), 1040(2), 1084(3), 1124(4), 1158(1), 1180(2), 1223(1), 1258(7), 1313(3), 1358(2), 1390(2), 1425(3), 1448(6), 1461(6), 2874(10), 2902(2), 2930(4), 2960(8), 2993(8), and 3063(3). G. M. K.

Slobodin, Ya. I. U.S.S.R.

Action of phosphorus trichloride and tribromide on dimethylcyclopropylcarbinol. Ya. M. Slobodin, V. I. Grigoriev, and Ya. E. Smirnov. *Vestn. Nauk. Obshchestva Petroleum Processing Inst., Leningrad*. *Zhur. Obrabotki Khim. 23*, 1873-7 (1953) (cf. C.A. 46, 10111b, 10112c). Dimethylcyclopropylcarbinol (I) and PCl₃ yield up to 50% abnormal product: 5-chloro-2-methyl-2-pentene (II), along with isopropenylcyclopropane (III). PBr₃ and I yield only the abnormal product: 5-bromo-2-methyl-2-pentene (IV). I was prep'd. from MeMgI and acetyl cyclopropane; pure I b. 122-3°, d₄ 0.8816, n_D²⁰ 1.4338. To 20 g. PCl₃ in 150 ml. dry Et₂O was added a little pyridine, followed by a mixt. of 40 g. I and 16 g. pyridine at 30-5°; after 0.6 hr. at room temp. the mixt. was quenched in ice-H₂O and the org. layer was distd. yielding 8 g. crude hydrocarbon, b. 54-78°, and 20.5 g. crude chloride, b. 129-33°. Redistn. gave III, b. 70-2°, d₄ 0.7514, n_D²⁰ 1.4260. Distn. of the chloride yielded pure II, b. 132-4°, d₄ 0.9164, n_D²⁰ 1.4468. Ozonolysis of II gave Me₂CO peroxide, m. 129°, and ClCH₂CH₂CO₂H, m. 38°. Hydrolysis of II with 10% K₂CO₃ gave I, but in impure condition; as some unchanged II was still present and the product showed a Raman line at 1674 cm.⁻¹, indicating that along with I, the hydrolysate gave some 2-methyl-2-penten-5-ol. II added to hot soln. of KOH in EtOCH₂CH₂OH gave 70% 2-methyl-2,4-pentadiene (V), b. 75.5-7.0°, n_D²⁰ 1.4518; the product readily gave an adduct with maleic anhydride (cf. Farmer and Warren, C.A. 26, 1573). III obtained in the original reaction contained some 3% diene, as shown by quant. detn. of maleic anhydride addn. Reaction of 20 g. I with 60 g. PBr₃ under the above conditions gave 88% IV, b. 164-5°, d₄ 1.2506, n_D²⁰ 1.4780; with KOH in EtOCH₂CH₂OH it gave V. Raman spectra given. G. M. K.

26100477/11.

U.S.S.R.

Molochanov, Ya. M., Kosolapoff, and M. V. Blinova.
Zhur. Obshchey Khim. 33: 1054-7 (1963). Passage of 50 g. cyclobutanecarboxylic acid and 82 g. 84% HCO_2H through a tube filled with MnO at 410-20° gave 15.5 g. cyclobutyl-formaldehyde, b. 118-15°; d₄ 0.9356, n_D 1.4357; 2,4-dinitrophenylhydrazone, m. 163-4°. The Raman spectrum was given. The aldehyde polymerizes readily in the presence of CaCl_2 , yielding a dimer, m. 118.5-20.5°. The aldehyde (15.5 g.) was added to a soln of 34 g. 34% formalin in 123 ml. H_2O from 2 separate funnels simultaneously with 8.3 g. $\text{Cs}(\text{OH})_2$ suspended in 47 ml. H_2O at 30° over 3 hrs. with good stirring; after 1 hr. at 60° the soln was filtered, neutralized with H_2SO_4 and exid. for 7-10 days with $(\text{CH}_2=\text{CH})_2\text{Cl}_2$, yielding 79% 3,1-dimethylcyclobutane, b.p. 134-8°. Only a trace of the diol (I) was obtained on reduction of dist. 1,1-cyclobutanediacarboxylate with LiAlH_4 ; since the ester failed to react in Et_2O ; however, the reduction of the free acid (15 g.) with fresh LiAlH_4 gave an unstated yield of the I, which, however, in contrast to the above prepn. m. 138-9°. I treated with 50% by wt. of pyridine and then added to PBr_3 with ice-cooling gave after final heating to 80-85°, 40%, 3,1-dibromomethylcyclobutane, b.p. 102-4°, d₄ 1.5780, n_D 1.6240. This treated with Zn dust in 85% Et_2NH with continuous distn. of the product gave 78% hydrocarbon, C_{4}H_6 , b. 72-4°, d₄ 0.7854, n_D 1.4221; wine Raman spectrum was given: I absorbs 1 mole H (slight excess); ozonolysis gave HCO_2H and cyclopentanone. Thus the hydrocarbon was methylenecyclopentane, and no spirohexane was detected. G. M. Kosolapoff

Slobodin, Ya. M.

USSR

Dibromides of butadiene and its homologs. Ya. M.
Slobodin. J. Gen. Chem. U.S.S.R. 24, 453 (1954) [C.A. 49, 6050f].
[Bromination]. See C.I. 49, 6050f.

✓ *reed*

SLOBODIN, YA. M.

USSR

Spiro[2,4]heptane. Ya. M. Slobodin and M. V. Blinova.
J. Gen. Chem. USSR, 14, 933-6 (1944) (Engl. translation).
See *C.A.*, 49, 53171.

R. L. R.

MP
RM

Slobodin, Ya. M.

USSR/Chemistry - Analysis

Card 1/1 : Pub. 151 - 8/37

Authors : Slobodin, Ya. M.

Title : Butadiene dibromide and its homologues

Periodical : Zhur. ob. khim. 24/3, 444-447, Mar 1954

Abstract : The combined diffusion spectra of divinyl dibromide and its closest homologues, diethyl and diacetyl ether of butene-2-diol-1,4, were investigated. It was established that addition of Br to above mentioned conjugated dienes follows a generally known pattern. The 1,4-dibromides formed as result of the addition reaction were found to have a trans-configuration. The bond frequencies of the dibromides were calculated. The combined diffusion spectra of the products investigated are listed. Six references: 2-USA and 4-USSR (1931-1953). Tables.

Institution :

Submitted : October 23, 1953

SLOBODIN, Ya.M.

USSR/Chemistry

Card 1/1

Authors : Slobodin, Ya. M.; and Blinova, M. V.
Title : About spiro-(2, 4)-heptane
Periodical : Zhur. Obshchei Khim. 24, Ed. 4, 621 - 625, April 1954
Abstract : Through condensation of cyclopentylformaldehyde with formaldehyde in an alkali medium the authors obtained an 86% yield of 1, 1-dimethylol-cyclopentane. Separation of bromine from 1, 1-dibromodimethylcyclopentane with zinc powder led to formation of a hydrocarbon mixture containing about 40% of spiro-(2, 4)-heptane and about 60% of methylene-cyclohexane. The combined diffusion spectrum of the derived hydrocarbon showed a line with a frequency of 1650 cm⁻¹ which indicates the presence of a hydrocarbon with double bond.
Ten references; 7 USSR since 1915; 1 USA 1948; 2 Germans since 1909.
Table, chem. formulas.
Institution :,
Submitted : May 20, 1953

SLOBODIN, Ya. M.

USSR/Chemistry - Synthesis

Card 1/1 : Pub. 151 - 31/42

Authors : Slobodin, Ya. M.; Blinova, M. V.; and Devyatova, N. I.

Title : Synthesis of cyclopentanol

Periodical : Zhur. ob. khim. 24/9, 1639-1640, Sep 1954

Abstract : Various methods of reducing cyclopentanol were investigated. It was established that hydrogenation of cyclopentanol, over a Ni-catalyst applied on diatomaceous earth (kieselguhr) at 125°, results in formation of cyclopentane. The results obtained, during hydrogenation over a copper-chromium-barium catalyst at 160-170°, are described. Eight references: 3-German; 2-USSR; 2-French and 1-USA (1893-1944).

Institution : ...

Submitted : April 14, 1954

Slobodin, Ya. M.

USSR/Optics - Spectroscopy, K-6

Abst Journal: Referat Zhur - Fizika, No 12, 1956, 35832

Author: Slobodin, Ya. M., Shmulyakovskiy, Ya. E., Rzhendzinskaya, K. A.

Institution: None

Title: Combination-Scattering Spectra in Low-Molecular Polysiloxanes

Original

Periodical: Dokl. AN SSSR, 1955, 105, No 5, 958-960

Abstract: Studies were made of the combination spectra of hexamethyldisiloxane ($\text{CH}_3)_3\text{Si}-\text{O}-\text{Si}(\text{CH}_3)_3$), octamethyltrisiloxane ($(\text{CH}_3)_3\text{Si}-\text{O}-\text{Si}(\text{CH}_3)_2-\text{O}-\text{Si}(\text{CH}_3)_3$), dekamethyltetrasiloxane ($(\text{CH}_3)_3\text{Si}-\text{O}-\text{Si}(\text{CH}_3)_2-\text{Si}(\text{CH}_3)_2-\text{O}-\text{Si}(\text{CH}_3)_3$), hexamethylcyclotrisiloxane ($(-\text{Si}(\text{CH}_3)_2-\text{O}-)^3$), octamethylcyclotetrasiloxane ($(-\text{Si}(\text{CH}_3)_2-\text{O}-)^4$), dekamethylcyclopentasiloxane ($(-\text{Si}(\text{CH}_3)_2-\text{O}-)^5$), and dodekamethylcyclohexasiloxane ($(-\text{Si}(\text{CH}_3)_2-\text{O}-)^6$). A tentative interpretation of the bands is given. A substantial difference was observed between the spectrum of the hexamethylcyclotrisiloxane and the spectra of the other investigated cyclical polysiloxanes.

Card 1/1

Slobodin Ya M.

Action of trimethylamine on polyhalides. Ya. M. Slobodin and N. A. Selezneva. Zhur. Obshch. Khim. 20, 825 (1950). CH_2I_2 and excess Me_3N (cooling needed) in a sealed tube in 1 month gave 95% $\text{CH}_2(\text{NM}_2)_2\text{I}_2$ and $\text{CH}_2\text{I}-(\text{NM}_2)\text{I}$ in 49:51 proportion. CHBr_3 and Me_3N in 1 month gave 50% $\text{CH}(\text{NM}_2)_2\text{Br}_3$, $\text{CH}_2\text{BrCH}_2\text{Br}$ and Me_3N in 2 months gave 95% $(\text{CH}_2\text{NM}_2)_2\text{Br}_3$; cyclohexene dibromide and Me_3N in 3 months gave 100% 1,2-bis(trimethylammonium)cyclohexane bromide; $\text{MeCHBrCH}_2\text{Br}$ and Me_3N in 4 months gave 50% 1,2-bis(trimethylammonium)-propane bromide; $\text{Me}_2\text{CBrCH}_2\text{Br}$ and Me_3N in 4 months gave 30% 1,3-bis(trimethylammonium)-2-methylpropane bromide; $\text{CH}_2(\text{CH}_2\text{Br})_2$ and Me_3N in a few days gave 100% $\text{CH}_2(\text{CH}_2\text{NM}_2)_2\text{Br}_3$. In 2 months $\text{CHBr}(\text{CH}_2\text{Br})_2$ and Me_3N gave the diammonium salt $\text{C}_9\text{H}_{12}\text{N}_2\text{Br}_3$ and after 8 months there formed 100% 1,2,3-tris(trimethylammonium)-propane bromide. $\text{MeCBr}(\text{CH}_2\text{Br})_2$ and Me_3N in 8 months gave 100% 1,2,3-tris(trimethylammonium)-2-methylpropane bromide while in 3 months there was formed only the diammonium salt $\text{C}_9\text{H}_{12}\text{N}_2\text{Br}_3$. Butadiene tetrabromide (solid isomer) and Me_3N in 3 months gave 100% 1,2,3,4-tetrakis(trimethylammonium)butane bromide. $\text{CHOH}(\text{CH}_2\text{Br})_2$ and Me_3N in 2 months gave 100% 1,3-bis(trimethylammonium)-2-propanol bromide. In 3 months $\text{CHOH}(\text{CH}_2\text{Cl})_2$ and Me_3N gave a mixture of 80% monoammonium salt and 20% diammonium salt, $\text{CO}(\text{CH}_2\text{Br})_2$, and Me_3N in several days gave 1,3-bis(trimethylammonium)-2-propanone bromide. In 2 months $\text{C}_8\text{H}_7\text{CH}_2\text{CH}_2\text{CN}$ and Me_3N gave 4-trimethylammoniumbutyronitrile chloride (I), $\text{CH}_2:\text{CH}_2:\text{CHCH}_2\text{NM}_2\text{I}$. Crotyl chloride and Me_3N in 40 hrs. gave $\text{MeCH}:\text{CHCH}_2\text{NM}_2\text{Cl}$. Addn. of Me_3N to ($\text{CH}_2\text{Br})_2$ with cooling in Et_2O rapidly gave ($\text{CH}_2\text{CH}_2\text{N}$

2
0
0
Chem
1/2

Slabodin, V. M., Seleznev, N. A.

Me_2Br_2 . Similarly, in several days Me_2N and 2,5-dibromo-
hexene gave 100% 2,5-bis(trimethylammonium)-3-hexene
bromide. When trimethylallylaminium, 1,2-bis(trimethylammonium)propane, or 1,3-bis(trimethylammonium)
propane halides were treated with 10% excess 40% KOH and
warmed, there was obtained, resp., 60%, 90%, or 85%
allylene, mixed with a little unsatd. amide. Similar treat-
ment of I gave crotonic acid. The allylene prep'd. above
boiled over a wide range but appeared to be totally free of
allene.

G. M. Kosolapoff

4/2
PM

Slobodin, Ya. M.

1
Synthesis of acetylenes by exhaustive methylation. Ya.
M. Slobodin and N. A. Selezneva. J. Gen. Chem. U.S.S.R.
26, 783-5 (1956) (English translation).—See C.A. 50, 14502a.
B.M.B.

2
J. Gen. Chem. U.S.S.R.
B.M.B.

Slobodin, Ya. M.

✓ Action of trimethylamine on polyhalides. Ya. M.
Slobodin and N. A. Setezneva. J. Gen. Chem. U.S.S.R. 26,
797-801 (1956) (English translation).—See C.A. 50, 14510f. Chem. 3
B. M. R.

SHOBODIN, YA. M.

Sample acetylenes and alkene compounds. Ya. M.
Slobodin and N. A. Selenova. U.S.S.R. 107,169. Aug. 25,
1957. Salts of 1,2- and 1,3-bis(quaternary ammonium)
bases are distd. with a solid hydroxide or its aq. soln. To
obtain alkene compds. 1,4-bis(quaternary ammonium)
bases contg. an unsatd. C chain are treated in a similar
manner.

M. Hoch

3
1-4E3d

1-4E4

1-4E2c(7)

2-MAY

Slobodin, Ya. M.

✓ Thermal decomposition of butane-2,3-di(trimethylsilyl) ketone hydroxide). Ya. M. Slobodin and D. Sernev. Zhur. Obshch. Khim. 27, 1892-3 (1957); cf. C.A. 50, 14510f; Hurd and Drake, C.A. 33, 77394. Disin. of 12 g. (MeCHNMe₂)₂Br with excess 40% KOH and collection of the volatile products in Br gave butadiene tetrabromide, m. 116°. No adducts corresponding to dimethylacetylene or methylallene were found. CH₃CH₂NH₂ with AgO gave EtCO₂H, possibly through formation of EtCH₂NH. G. M. Kozlapoff

3
4E4
4E2C (g)
2 mol
4E3d

SLOBODIN, Ya.M.

Synthesis of enynes by methylation. Zhur. ob. khim. 27
no.9:2473-2475 S '57. (MIRA 11:3)
(Hydrocarbons) (Methylation)

SLOBODIN, Ya.M.; AL'TMAN, S.S.; TANMIK, K.D.

~~Preparation of antiwear sulfur-containing additives based on ethylene sulfide and fatty acids. Proizv.smez.mat. no.5:58-63 '59.~~

1. Leningradskiy opytnyy neftemaslozavod imeni Shauryan.
(Lubrication and lubricants--Additives)

SLOBODIN, Ya.M., doktor khim.nauk, prof.

Synthesis of hydrocarbons with a triple bond by the method
of exhaustive methylation. Trudy LIKI no.25:162-168 '59.
(MIRA 12:11)

(Hydrocarbons)

S/079/61/031/012/003/011
D228/D301

AUTHORS: Slobodin, Ya. M., and Khitrov, A. P.

TITLE: The problem of preparing allene

PERIODICAL: Zhurnal obshchey khimii, v. 31, no. 12, 1961, 3945-
3947

TEXT: In considering this question the authors note the relatively small amount of previous work devoted to the properties of allenes. This has chiefly been due to the absence of suitable techniques for preparing these hydrocarbons in a sufficiently pure form; according to S. V. Lebendev even traces of 2-bromopropene in allene have a negative influence on its polymerization. Other solvents were, therefore, tested when effecting G. G. Gustavson's reaction between 2,3-dibromopropene and zinc dust: di-iso-propyl ether, dioxane, acetonitrile, diethyl formal, butyl acetate, and iso-amyl acetate. The best results were obtained with butyl acetate and iso-amyl acetate, the yield of allene being 95-98%. The examination of the infrared spectrum of allene synthesized by these reagents

Card 1/2

S/079/61/031/012/003/011

D228/D301

The problem of preparing allene

which was photographed on a Hilger H-800 spectrometer, disclosed the absence of any 2-bromopropene and methylacetylene impurities. The authors thus recommend this procedure as a means of obtaining pure allene. There are 1 figure, 1 table and 6 references: 3 Soviet-bloc and 3 non-Soviet-bloc. The references to the English-language publications read as follows: A. T. Blomquist and J. A. Verdol, J. Amer. Chem. Soc. 78, 109 (1956); Z. W. Zinnet and W. H. Avery, J. Chem. Phys. 6, 686 (1938). ✓

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut neftekhimicheskikh protsessov (All-Union Scientific Research Institute of Petrochemical Processes)

SUBMITTED: February 6, 1961

Card 2/2

LABUTIN, Aleksandr Lukich, kand. tekhn. nauk; FEDOROVA, Nina Stepanovna; SLOBODIN, Ya.K., prof., red.; VASIL'YEV, Yu.A., red. izd-va; BELOGUROVA, I.A., tekhn. red.

[Anticorrosive and sealing thiokol compounds] Antikorrozion-nye i germetiziruiushchie tiokolovye sostavy. Leningrad, 1962. 21 p. (Leningradskii dom nauchno-tekhnicheskoi propagandy. Obmen peredovym opyтом. Seriya: Sinteticheskie materialy, no.4)

(MIRA 15:10)

(Rubber, Synthetic)
(Corrosion resistant materials)

LABUTIN, Aleksandr Lukich, kand. tekhn. nauk; FEDOROVA, Nina Stepanovna; SLOBODIN, Ya.M., prof., red.; VASIL'YEV, Yu.A., red.izd-va; BELOGUROVA, I.A., tekhn. red.

[Hermetic seals from rubbers] Germetiki na osnove kau-chukov; stenogramma lektsii. Leningrad, 1962. 47 p.
(MIRA 15:10)

(Sealing (Technology)) (Rubber, Synthetic)

SLOBODIN, Ya.M.; VOL'PE, L., red.; BARANOVA, L., tekhn. red.

[Elements of the main subgroups of the groups VII-IV of
the periodic system; a handbook of inorganic chemistry]
Elementy glavnnykh podgrupp VII-IV grupp periodicheskoi
sistemy; uchebnoe posobie po neorganicheskoi khimii. Le-
ningrad, Severo-Zapadnyi zaochnyi politekhn. in-t, 1963.
185 p.
(MIRA 17:3)

L 13559-63

ACCESSION NR: AP3000706

EWP(j)/EPF(c)/EMT(m)/BDS PG-l/Pr-l; RM/WT

8/0190/63/005/005/0774/0776

AUTHOR: Slobodin, Ya. M.; Matusevich, N. I.

62
61

TITLE: Regularity of polyisobutylene structure

SOURCE: Vy'sokomolekulyarnye soyedineniya, v. 5, no. 5, 1963, 774-776

TOPIC TAGS: thermal depolymerization, polyisobutylene, dimers

ABSTRACT: An earlier study of the thermal degradation products of polyisobutylene showed that it undergoes depolymerization along the quaternary carbon-carbon links, with the formation of isobutylene and its low-molecular polymers (from dimers to hexamers) and its other constituents. That study led to the conclusion that the polyisobutylene chain consisted largely of head-to-tail-linked isobutylene molecules. The present investigation of thermal depolymerization was conducted at 325 to 340°C, yielding 51% gaseous hydrocarbons and 49% low-molecular liquid products. From these a fraction was obtained with a boiling point of 115 to 167°C, representing an intermediate fraction between the dimers and trimers of isobutylene. From it a substance with a melting point of +8°C was isolated. This substance proved to be pure diisocrotyl, representing 2.1% of the issuing polyisobutylene, indicating that it contained 2.1% of tail-to-tail isobutylene units. Orig. art. has: 2 formulas and 1 table.

Card 1/21 Northwestern Correspondence Polytechnical Inst.

SLOBODIN, Ya. M.; KHITROV, A. P.

Thermal dimerization of allene. Zhur. ob. khim. 33 no.1:
153-157 '63. (MIRA 16:1)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut neftekhimi-
cheskikh protsessov.

(Allene) (Polymerization)

SLOBODIN, Yakov Mikhaylovich; VOL'PE, L., red.

[Elements of the main subgroups of III-O groups. Elements of the side subgroups of the periodic system; a manual of inorganic chemistry] Elementy glavnnykh podgrupp III-O grupp. Elementy pobochnykh podgrupp periodicheskoi sistemy; uchebnoe posobie po neorganicheskoi khimii. Leningrad, Severozapadnyi zaochnyi politekhn. in-t, 1964. 175 p.

(MIRA 18:3)

L-41765-65 EPF(c)/EPR/EWP(j)/EWI(m)/I PC-4/Pr-4/Ps-4 RM/kW

ACCESSION NR: AF4030374

S/0190/64/006/003/0541/0544

AUTHORS: Slobodin, Ya. M.; Mayorova, V. Ye.; Smirnova, A. M.

TITLE: Thermal decomposition of synthetic ethylene-propylene rubber. I. C₂ - C₆ hydrocarbons among its thermal decomposition products

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 6, no. 3, 1964, 541-544

TOPIC TAGS: rubber, ethylene propylene, thermal decomposition, fractionation, hydrocarbon

ABSTRACT: Synthetic ethylene-propylene rubber, obtained by copolymerization of equimolar quantities of ethylene and propylene on Ziegler's catalyst, was subjected to thermal decomposition in a Würtz flask to determine the structure of the polymer. The distillation of gaseous products yielded 93.66% of liquid condensate, 5.20% of gas, and 1.14% of residue in the flask. The gas mixture was analyzed by the gas-liquid chromatographic technique, while the liquid part was subjected to fractional distillation. It was found that the gas mixture consisted of ethane and ethylene, propane, propylene, isobutylene, butane and butylene, and butadiene. In the liquid portion, 20 separate fractions were obtained within the 32-100°C temperature range.

Card 1/2

L 41765-65

ACCESSION NR: AP4030374

Other fractions were separated in 50°-temperature intervals, up to 250°C. Analysis by gas-liquid chromatography showed the C₅ fraction to consist of n-pentane, pentene-1, 2-methylbutane, 2-methylbutene-1, 2-methylbutene-2, isoprene, and piperilene. The C₆ fraction contained n-hexane, hexene-1, and 2-methylpentane. The authors calculated that in the C₅ fraction the sum of isomers with branched chain was 4.7 times higher than the sum of the ones with a normal chain structure. In the C₆ fraction there was a predominance of hydrocarbons with normal carbon chain. The mechanism of thermal decomposition of ethylene-propylene rubber is linked by the authors to an initial formation of free radicals, which originates at the impact of the residual Ziegler catalyst upon the copolymer. It was concluded that 1) the propylene units in the copolymer are separated by one, two, or three ethylene units; and 2) propylene units directly linked by the tail-to-tail principle may be present in very small amounts. Orig. art. has: 4 tables and 1 formula.

ASSOCIATION: Severo-zapadnyy zaochnyy politekhnicheskiy institut (Northwestern Correspondence Polytechnical Institute)

SUBMITTED: 01Apr63

ENCL: 00

SUB CODE: GC

NO REF Sov: 005

OTHER: 008

Card 2/2 CC

SLOBODIN, Ya.M.; BARANOVICH, Z.N.; BOGDANOVA, L.P.

Determining the solubility of gases in liquids. Zav. lab. 30
no. 8:972 '64. (MIRA 18:3)

1. Severo-zapadnyy zaocinnyy politekhnicheskiy institut.

UDOVIN, Ya. A.; SUL'YEV, V. V.

Hydrogenation of dimethylenecyclooctanes. Kmir. ob. Kim. 34
no. 6:1727-1728 Je '64. (MIKA 15:1)

I. Vsesoyuznyy Nauchno-issledovatel'skiy institut neftekhimi-
cheskikh protsessov.